DOCUMENT RESUME

ED 088 264 EC 061 381

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TITLE An Assessment of Ohio Residential Schools and Other Public School Settings for Educating Deaf Students and Blind Students. Final Report.
INSTITUTION Battelle Memorial Inst., Columbus, Ohio. Columbus Labs.
SPONS AGENCY Ohio State Dept. of Education, Columbus.
PUB DATE Sep 69
NOTE 61p.

EDRS PRICE MF-$0.75 HC-$3.15
DESCRIPTORS Aurally Handicapped; *Blind; *Day Schools; *Deaf; Evaluation; *Exceptional Child Education; *Residential Schools; State Schools; State Surveys; Visually Handicapped

ABSTRACT

Studied was the effectiveness of two Ohio State residential schools, one for the blind and one for the deaf, to determine whether the state should continue to operate the residential schools. The study involved a literature review, interviews with special educators, visits to the two residential schools, visits to selected Ohio day programs, visits to selected out-of-state residential and day programs, and consultation with experts in the field. It was concluded that there is a need for both residential and day programs, that the day program has the potential for greater success with most handicapped students, and that the state needs to develop a comprehensive plan for educating the hearing and visually handicapped. The following were among recommendations reported: retention of the residential schools for students who would be better served in a residential setting, elimination of residential placement due to the lack of a local day program, improvement of the quality of day programs, development of a state plan for educating Ohio's hearing and visually handicapped children, up-grading of cottage parents in residential schools, development of a research center at each of the two residential schools, assignment of day students to special short-term courses at the residential schools, and provision of preschool facilities for children and parents within a reasonable traveling distance of the handicapped child's home. Additionally suggested were areas for research such as the development of an effective cottage parent program and followup studies on blind and deaf high school graduates. (DB)

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EDUCATION FOR THE BLIND AND DEAF

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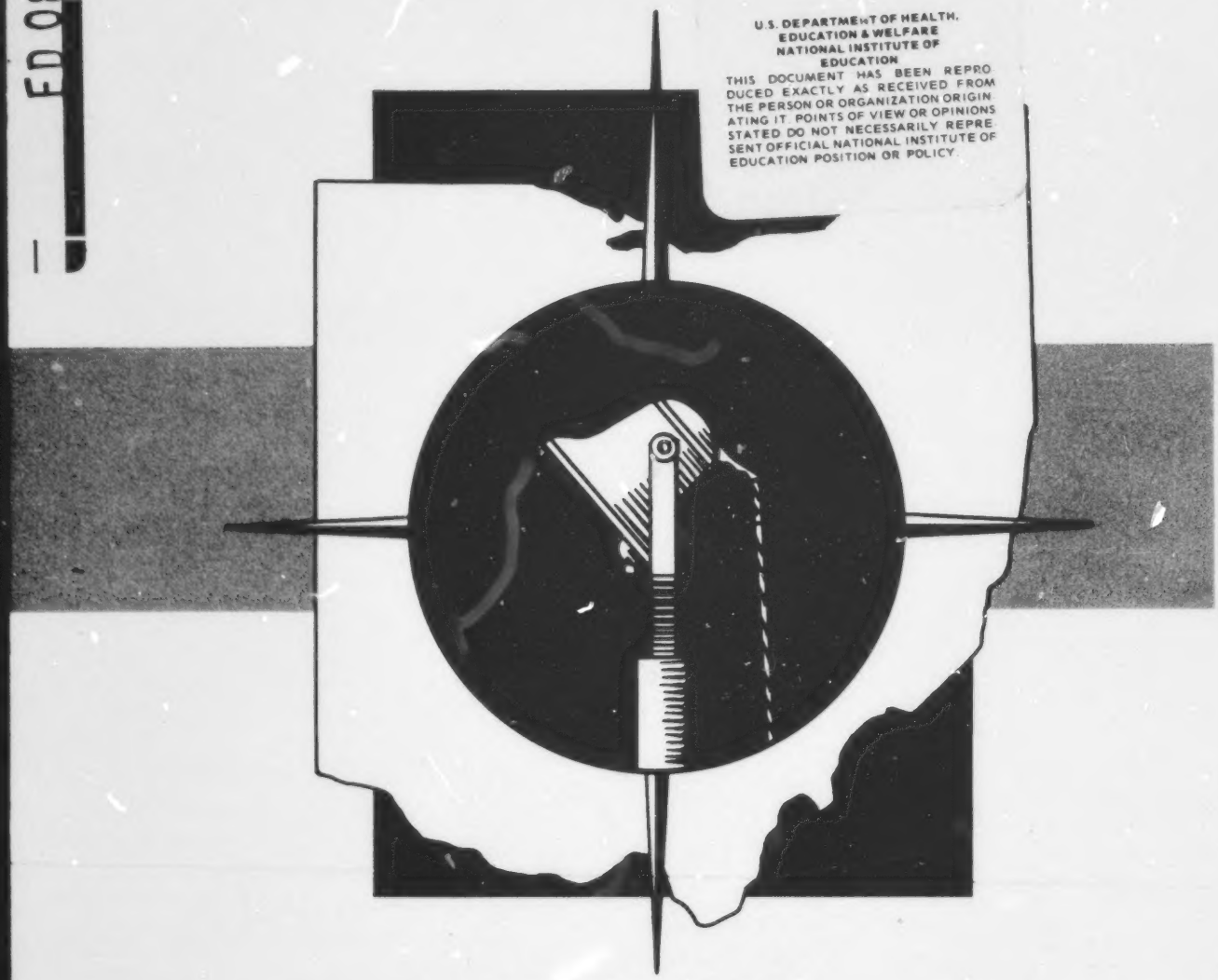

PREPARED FOR THE

OHIO DEPARTMENT OF EDUCATION

BY

BATTELLE MEMORIAL INSTITUTE
COLUMBUS LABORATORIES

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ED 088264

FINAL REPORT

on

AN ASSESSMENT OF OHIO RESIDENTIAL SCHOOLS AND OTHER PUBLIC SCHOOL SETTINGS FOR EDUCATING DEAF STUDENTS AND BLIND STUDENTS

to

OHIO DEPARTMENT OF EDUCATION

September, 1969

by

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FOREWORD

This report is one of a series of reports prepared by the staff of Batteile Memorial Institute, Columbus Laboratories, for the Ohio Department of Education under a contract research project entitled PLANNING TO MEET EDUCATIONAL NEEDS IN OHIO SCHOOLS. Funds for the project were made available by the Ohio Department of Education under provisions of Title III, ESEA.

Dissemination of the material contained herein is the responsibility of the Ohio Department of Education. Requests for copies may be addressed to: Dr. Russell A. Working, Division of Research, Planning, and Development, Ohio Department of Education, Columbus, Ohio 43215.

ACKNOWLEDGMENT

The authors would like to thank the many people who contributed their time and much valuable information for this study. Special appreciation is extended to the superintendents of the residential schools and their administrative and teaching staff; the administrators and staff of the Ohio Division of Special Education; and specialists in the education of the deaf and the blind in Ohio, Illinois, California, North Carolina, and Washington, D. C. The authors also wish to thank the deaf students and blind students who shared their thoughts with the research team.

A listing of the names and affiliations of personnel interviewed or contacted for information is presented in the Appendix to this report.

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AN ASSESSMENT OF OHIO RESIDENTIAL SCHOOLS AND OTHER PUBLIC SCHOOL SETTINGS FOR EDUCATING DEAF STUDENTS AND BLIND STUDENTS

I. INTRODUCTION

Ohio has historically been a pioneering state in providing for the education of the deaf and blind.* The State's leadership in these areas of special education is demonstrated by such facts as:

- The first institution for deaf children approved by legislative action was opened in Ohio (1829).
- Ohio sponsored the first state residential school for the blind (1837).
- The first legislation for day-school programs for the deaf (1907) and blind (1913) was passed in Ohio.
- Cincinnati was the second city in the nation (after Chicago) to establish day-school classes for the blind (1905).

(Division of Special Education, 1968, and Kirk, 1962.)**

Since the initiation of these early programs, special education and related services for the deaf and blind in Ohio have expanded greatly. Public education of school-age deaf and blind children, which is under the administration of the Ohio Department of Education (ODE), is presently provided through a combination of organizational plans, or educational settings. The educational settings provided for children with these handicaps are State residential schools, special day schools (for the deaf), and day class programs. The latter typically include "special" and "integrated" classes within a regular public school. These educational settings are briefly described below:

State Residential Schools – centralized special schools that not only provide for the academic and prevocational education of enrolled students, but also provide for much of their care, including room and board, routine medical services, guidance and counseling, and social and recreational programs.

Public (Special) Day Schools – generally considered as those schools that are housed in an entirely separate building for exclusive education of the handicapped. (Ohio has day schools only for the deaf.))

Public Day Classes – classes conducted in a school that is not devoted entirely to the education of the handicapped. Classes generally take one of two forms:

- Special Classes – small, self-contained classes in a regular public school taught by teachers specialized in the handicap involved.
- Integrated Classes – regular public school classes in which one or more handicapped students are placed for all or some of their education. The handicapped students are often supported by resource or itinerant teachers.

Some school systems offer day class approaches that vary from that described above. However, the descriptions are representative of the day-class situations most frequently found in Ohio. Subsequent sections of this report describe and discuss in greater detail each of the above educational settings.

A number of factors enter in determining where the Ohio deaf or blind child receives his education. The major factors include the following:

- Availability of a local program
- Policy of the school district in which the child resides
- Travel distance to and from a program
- Desire of the parents and/or student
- Ability, emotional characteristics, age, etc., of the child and his degree of handicap
- The suitability of the child's home environment.

During his school career, a deaf or blind student may receive all of his education in a single setting, e.g., in a residential school, or he may for various reasons (including the foregoing) attend two or more settings, e.g., residential and day programs.

The brief description above presents the basic aspects of the current system for meeting the educational needs of the deaf and blind in Ohio. It is this educational system that, in broad terms, is the subject of the present study.

*In this report "deaf and blind" refers independently to blind individuals and deaf individuals, rather than to those who are both deaf and blind.

**References cited are presented in alphabetical order at the end of this report.

Study Objectives and Scope

The underlying purpose of the present study is to provide the basis for arriving at an improved system and a State plan for satisfying the educational needs of deaf and blind children in Ohio during the 1970 to 1980 period. Emphasis was placed on the administrative and organizational aspects of the educational system, rather than on such factors as curriculum and teaching methods. Within this context, the primary concern of the present study is the selective assessment of the two existing State residential schools with respect to such considerations as the degree to which they meet the needs of the deaf and blind, their organization and administration, and their efficiency of operation. On the basis of this assessment, Battelle was specifically charged with answering the question: Should the State retain and operate the existing residential schools for the deaf and blind?

It should be noted that the study is concerned with deaf and blind students – to the extent that it is possible to separate them from the hard of hearing and partially sighted.

Study Approach

The general approach employed in conducting the study is outlined below:

- A detailed review of the literature bearing on the education of the deaf and blind.
- A review of State standards, regulations, and procedures regarding special education, particularly as related to the deaf and blind.
- Interviews and consultations with personnel at the Division of Special Education.
- Interviews with the superintendents, teachers, other staff members, and students at the two State residential schools.
- On-site observations of the facilities and special equipment items at both residential schools.
- Visits to a special day school (Alexander Graham Bell, Columbus) for interviews with the principal, teaching staff, and students.
- Visits to a number of selected Ohio day-class programs, and interviews with their administrative and teaching staff.
- Interview visits to selected residential and day programs outside of Ohio (California, Illinois, and North Carolina).*

*Time and funding did not permit visits to other states.

- Interviews with recognized experts in the field of deaf and blind education.
- Contacts with national societies and organizations for the deaf and blind for purposes of obtaining data.
- Evaluation of the alternative systems for providing education to deaf and blind students.
- Assessment and integration of the obtained information to provide the basis for arriving at conclusions and recommendations – particularly as they relate to the two State residential schools.*

The sections of the report that follow present and discuss information pertinent to the central issues of the study. Specifically, Section II presents a detailed non-evaluative description of the current educational system for the deaf and blind; Section III discusses the educational needs of the deaf and blind; Section IV assesses the residential school approach, the alternatives and constraints; Section V presents recommendations, possible alternatives, and needed improvements in the educational settings; Section VI summarizes the study; and Section VII suggests specific topics requiring further study.

It should be noted that the "where" and "how" of the educational process for the blind and deaf is a highly controversial area. This is especially true for the deaf. Unfortunately, relatively little "hard" research information is available that bears on the basic questions raised in the study. In a survey of where blind students should be educated, Buell (1953) concludes, "What the field now needs is a more objective approach, a decision to determine the best methods on the basis of evidence, without prejudice".** And, in a major national study of the education of the deaf, Babbidge, et al. (1965), state:

> For a hundred years, many claim emotion has substituted for research in attacking problems in the whole field of education of the deaf. The classic controversies in the field have tended to push into the background the spirit of free inquiry. Preoccupation with one point of view or another has tended to stifle the objectivity essential to true research.

The lack of sufficient relevant research data was a definite handicap in the present study. In view of this limitation, a special effort was made to approach the issues and alternatives as systematically as possible and to weigh the limited evidence objectively in integrating the information gathered.

*The Appendix is a list of personnel interviewed or contacted for information.

**Although this article was published in 1953, to date there has been little change in this situation.

II. THE PRESENT EDUCATIONAL SYSTEM

This section describes the present educational system for the deaf and the blind in Ohio. Descriptions include the administration of the system as well as the student-evaluation and -placement procedures for the residential and day-class programs. Each of the two residential schools is then discussed in terms of facilities, enrollment, educational philosophy and objectives, curriculum, staff, budget, per-pupil costs, and special services and programs. The day programs are discussed in less detail due to the fact that the study focuses on the operation of the residential school programs. Included in the discussion are comparisons among all of the school settings regarding student distribution (geographically), teacher salaries, and per-pupil costs.

Education for the deaf and blind is provided through three different types of school settings:

State Residential Schools

- Ohio State School for the Blind (OSSB)
- Ohio School for the Deaf (OSD)

Both schools offer an academic program from kindergarten through twelfth grade and a prevocational program which begins during the elementary school years.

Public (Special) Day Schools

- The Alexander Graham Bell School in Columbus
- The Alexander Graham Bell School in Cleveland

Both A. G. Bell schools have a standard educational program from kindergarten through sixth grades. Affiliations with regular public schools allows students of the A. G. Bell schools, if capable, to continue their secondary education in either special and/or integrated classrooms.

Public Day Classes

- Special Classes
- Integrated classes taught by regular teachers usually with support from special teachers for the handicapped

Each of these school settings is described in detail in the following pages.

Administration of Residential and Day Programs

The administration of all public programs for education of the deaf and blind in Ohio is directed by the Department of Education and has the following dual structure (see Figure 1):

- The Division of Special Education under the Assistant Superintendent for Instruction oversees the special day school and regular public day-class programs that are administered by individual school districts.
- The Assistant Superintendent for School Administration oversees the residential school programs.

Although the two administrative units operate, for the most part, independently, decisions regarding the admission of applicants to the State residential schools and the re-evaluation of the educational status of students in day-class programs are the product of a review committee composed of representatives from both groups, as described below.

Evaluation and Placement

The sequence of events from application of a hearing or visually handicapped child to his placement in an Ohio public school program can be described as follows.

Each child for whom admission to either of the State residential schools is desired must be referred by his local school district to the Division of Special Education, which maintains a central file of all information concerning deaf and/or blind children. The referred child, if hearing-handicapped, is evaluated by a staff clinic team in the following areas:

- otological
- audiological
- psychological
- educational
- other special areas deemed necessary to complete the evaluation.

If the child is visually handicapped, the staff clinic team evaluates him in the areas listed below:

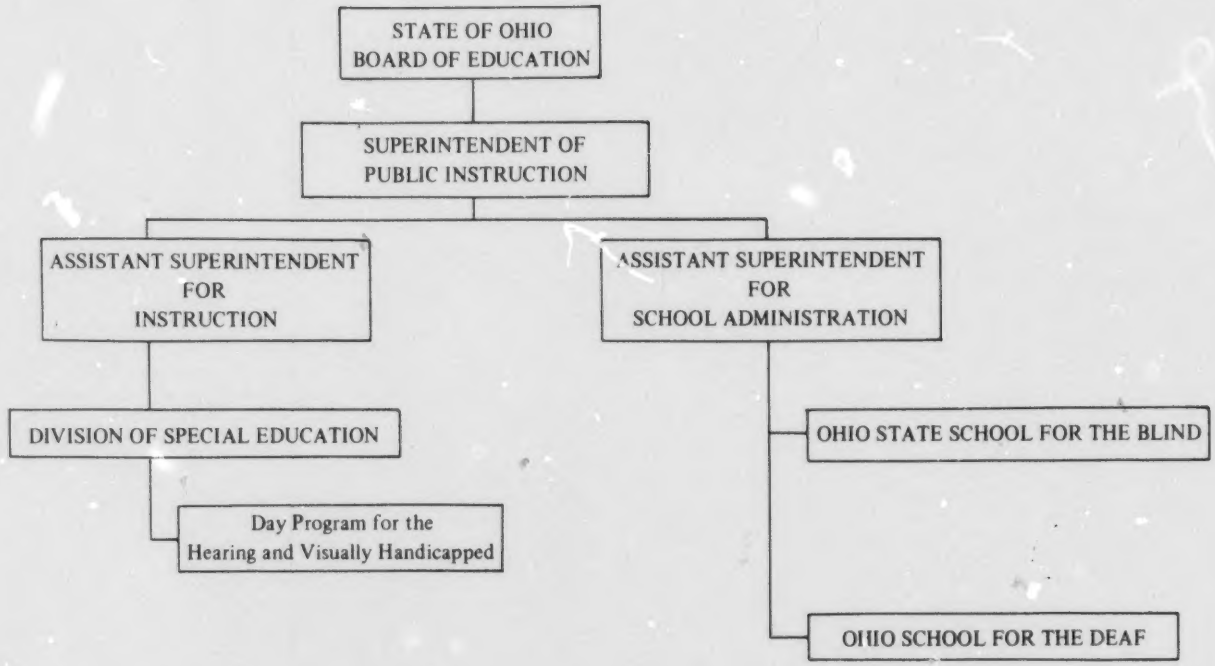

FIGURE 1. ORGANIZATION CHART – SPECIAL EDUCATION FOR THE HEARING AND VISUALLY HANDICAPPED

- ophthalmological
- psychological
- educational
- other special areas deemed necessary to complete the evaluation.

The clinic report on each child is then referred to a review committee composed of the superintendent of the residential school involved (or his designated representative), the Director of the Division of Special Education, and one member designated by the Superintendent of Public Instruction. The review committee integrates and evaluates all available information on each referral to determine the school setting that best meets the educational needs of the child.

Some children who have been attending a day school program, but who have had trouble adjusting socially and/or academically, are also referred to the staff clinic team. The educational, medical, and psychological status of these children is re-evaluated for possible transfer of a child to a residential school program. All reports of the committee's findings and recommendations are sent to the superintendent of schools in the child's home district, who in turn informs the child's parents and the appropriate members of the school staff.

The policies which guide the review committee in its decisions regarding admission to OSD are contained in Section 3325.011 of the *Ohio Laws for Special Education* as follows:

> Admission to School for the Deaf. . .
>
> Subject to the regulations adopted by the state board of education, the state school for the deaf shall be open to receive persons who are deaf, partially deaf, and both blind and deaf residents of this state, who, in the judgment of the superintendent of public instruction and the superintendent of the school for the deaf, due to such handicap, cannot be educated in the public school system and are suitable persons to receive instructions according to the methods employed in such school. . . (Gibbons, 1968).

Specific criteria for admission of a child to OSD, adopted by the State Board of Education in 1960, are that a child may be admitted if

- he has a severe-through-profound hearing loss in the speech range
- his calendar age is 4 years 6 months by September 1 of the current school year
- he is capable of profiting substantially by instruction
- he has sufficient physical and social maturity to adjust to the discipline of formal instruction and group living.

Section 3325.02 of the *Ohio Laws for Special Education* prescribes the following policies for admission to OSSB:

> Admission to School for the Blind. . .
>
> Subject to the regulations adopted by the state board of education, the state school for the blind shall be open to receive such blind and partially blind persons, residents of this state, who, in the judgment of the superintendent of public instruction and the superintendent of the school for the blind, due to such handicap, cannot be educated in the public school system and are suitable persons to receive instructions according to the methods employed in such school (Gibbons, 1968).

Specific criteria for admission to OSSB, adopted by the State Board of Education in 1960, are presented below. A child may be admitted if

- he has no vision, or the eye condition is such that vision cannot be used as the chief channel of learning
- his calendar age is 5 years by September 1 of the current school year
- he is capable of profiting substantially by instruction
- he has sufficient physical and social maturity to adjust to the discipline of formal instruction and group living.

In addition to the criteria for admission to OSD and OSSB stated above, the Ohio Department of Education lists three factors for consideration by the review committee in placing children in the residential schools:

- Availability of a suitable local school program
- Needs of the individual child
- Parental preference.

As discussed subsequently, these latter factors are responsible for a large percentage of the current enrollment at the state schools.

Determining the eligibility of all potential candidates for a public day program is the responsibility of the superintendent of the local school district. This responsibility includes ascertaining through qualified professional evaluations that young deaf and/or blind children have the mental readiness, emotional stability, and social maturity to be able

to profit from placement in an educational program at the beginning level. The criteria for admission to a public day program are, in general, similar to those outlined for the residential school and consider the child's severity of physical handicap, calendar age, and physical-emotional-social maturity. Preschool deaf and blind children might qualify for admission to a special preschool program in a day class program because of the support and security available from daily contact with their home environment, particularly their parents. Thus, it is possible that the calendar age of children who enter public day programs could, in some cases, be lower than that required for admission to the residential school programs.

Description of Ohio's Educational Programs for the Hearing and Visually Handicapped

The Ohio State School for the Blind

The Ohio State School for the Blind (OSSB) was the first state-supported residential school for the blind in the United States. It opened its doors July 4, 1837, with one teacher and five pupils. Today, OSSB is housed on a 100-acre site on the north side of Columbus. The present complex of classrooms, administrative offices, and dormitories was occupied in September 1953, and can care for the educational needs of a maximum of approximately 184 residential children.

Enrollment. OSSB had an enrollment of about 181 students for the 1968-69 school year.* (The enrollment figures for OSSB reported in this section are approximate. The small variations in the figures presented are generally due to the transfer of students to and from other educational programs during the school year.) As shown in Figure 2, the home counties of these students include almost all of the 88 counties in Ohio. Franklin, Hamilton, and Cuyahoga counties sent the largest numbers of visually handicapped children – 23, 11, and 9, respectively. Table 1 lists the primary reasons for the students' attendance at OSSB. It can be seen that the majority of the student body (119 or approximately 65 percent) attends OSSB because there is no program in their local area. The large percentage of students attending OSSB due to this situation is to be expected, as availability of a suitable local school program is one of the primary factors upon which decisions for placement in Ohio's residential schools are made.

The average I.Q.** of OSSB's student body is about 92, with a range of 59 to 146, and a standard deviation or spread of approximately 17.

*Nine of the 181 students are day students, i.e., they do not reside at OSSB but return home each day after school.

**The Hayes Binet Intelligence test is generally utilized to obtain this measurement.

Educational Philosophy and Major Objectives. The educational philosophy and major objectives of OSSB as presented by its superintendent are as follows:

- "...to provide the equipment, materials, instruction and guidance which will encourage students to acquire knowledge, physical skills, and the understandings which will enable them to take care of their personal needs, as physically fit, emotionally stable, morally upright, socially acceptable, economically competent and civilly responsible members of society"
- To provide the prevocational training and develop the mobility and orientation skills which will allow visually handicapped youth "...to develop stable skills and those understandings that make the worker an intelligent and productive participant in economic life"
- To provide the necessary medical and psychological services and programs which will allow visually handicapped youth "...to develop and maintain good health and physical fitness"
- To provide the educational opportunities and extracurricular activities which will promote and sustain the understanding of "...the rights and duties of the citizens of a democratic society and to be diligent and competent in the performance of their obligations as members of the community and citizens of our state and nation"
- To develop an appreciation of interpersonal relationships through instruction in home economics and sex education so that visually handicapped youth will be able "...to understand the significance of the family for the individual and society and the condition conducive to successful family life" (Overbeay, 1968).

Curriculum. The educational program at OSSB includes the following types of courses:

- academic, which are similar to those offered in the public schools
- industrial arts, such as electronics, home economics, and piano tuning and repair
- music, including band instruments, voice, history, and harmony
- commercial, including typing and dictaphone
- physical education
- vending-stand training program.

FIGURE 2. HOME COUNTIES OF STUDENTS ENROLLED AT THE OHIO STATE SCHOOL FOR THE BLIND FOR THE 1968-69 SCHOOL YEAR

Based on data obtained from OSSB.

TABLE 1. STUDENTS' PRIMARY REASON FOR ATTENDING OHIO STATE SCHOOL FOR THE BLIND, 1968-69(a)

Reason/Category	Number of Students	Percent
Student's family lives in Franklin County (or nearby)	0	0
No program in student's local area	119	65
Parent's/student's desire	47	26
Student transferred to school because he/she could not "make it" in a nonresidential school (i.e., special class in a regular school, or standard class in a regular school)	16	9

(a) Data obtained from administrative staff of OSSB.

The average class enrollment ranges from 6 to 20 students depending on the nature of the course work and the number of students selecting certain courses.

Approximately 10 to 15 students graduate each year with an accredited high school diploma, and about 20 percent of these enter college (Ohio State School for the Blind, undated).

Staff. OSSB has 28 teachers, or a pupil/teacher ratio of approximately 9 to 1. All but two teachers are on a full-time basis. The teaching staff includes 21 elementary and secondary teachers and 7 teachers of special subjects. Additional support is provided by 2 peripatologists*, 8 medical/paramedical personnel, a school psychologist, and a vocational-rehabilitation counselor. The students' living quarters (cottages) at OSSB are staffed by 17 cottage parents (youth leaders) who also live at the school. Assisting the superintendent are a principal, a building-maintenance superintendent, a food-service manager, a cottage-parent supervisor, and a coordinator of the central registry (described below).

School Budget. The expenditures from State appropriated funds for school year 1967-68 are as follows**:

	Expenditure	Per Pupil
Administration and Instruction	$339,743	$1,716
Care and Subsistance	257,041	1,298
Operation, Maintenance, and Equipment	105,057	531
Total	$701,841	$3,545

Enrollment: 198

The above figures include salaries, support, maintenance (including minor repairs) and equipment funds, but do not include capital costs. Further, no expenditures funded with Federal monies are included. With an enrollment of approximately 198 students for the 1967-68 school year and the above operational costs, the cost per student was $3,545. The school covers essentially all costs, with the exception of such items as clothing, transportation to and from home, and certain medical expenses.

Special Services and Programs. OSSB has a Central Registry of Braille, large-type, and recorded materials for the blind, and includes items reproduced locally as well as those received from the American Printing House for the Blind, Inc. These materials are available upon request to any special education unit for the blind in Ohio. The Registry was established through the cooperation of the Ohio Department of Education, the Ohio State School for the Blind, and Services for the Blind (of the Ohio Department of Welfare).

All children at OSSB are given individualized training in mobility and independent travel by two accredited peripatologists. The school also hosts a summer program for recent OSSB and day-program seniors and graduates which is sponsored jointly by OSSB and Bureau of Services for the Blind. This program offers instruction and training in (1) daily living skills, (2) mobility and orientation, and (3) general academic skills which are considered important for success in college. About 50 percent of the students attending this program are day-class students. The latter are generally referred by a vocational rehabilitation counselor.

To provide for the medical needs of its students, OSSB employs three full-time and two part-time registered nurses, and a part-time pediatrician, ophthalmologist, and dentist. The infirmary has bed space for 10 to 12 girls and 8 to 10 boys.

The Department of Welfare provides a full-time vocational rehabilitation counselor who works closely with the blind students at OSSB and, through local rehabilitation counselors, with blind youth in other parts of the state. His responsibility is to assist primarily the pupils in the ninth, tenth, eleventh, and twelfth grades, as well as those in lower grades having special problems with their vocational planning.

Special Equipment. OSSB has several sound-proof rooms for tape-recording operations and special recording equipment for compressing normal speech to a rate which allows more rapid assimilation of verbal material by the blind student. Many of the classrooms contain special tactual materials and devices which aid both teacher and student in the educational process. Books, maps, writers, counters, slates, styluses, and rulers in Braille form are examples of this type of equipment. A library and a large collection of tactual models are also available to students. The American Printing House for the Blind, which is subsidized by the U.S. Government, supplies a quota of books to the school upon request. The quota is determined on a per-capita (students) basis.

Living Quarters and Recreation. The children at OSSB are housed in eight cottages located on the school campus. There are 17 cottage parents who provide general supervision and assistance to the children after school hours. Living quarters for the cottage parents are adjacent to the rooms of the children they supervise. The students are encouraged to spend holidays and weekends with their parents. A number of recreational activities are available at the school including youth clubs, hobby clubs, bowling, and playground activities. Volunteers take the students on shopping trips and to special events outside the school grounds.

*Peripatology is an area of study concerned with independent travel and mobility for the visually handicapped.

**Expenditure information obtained from administrative staff of OSSB.

The Ohio School for the Deaf

The Ohio School for the Deaf (OSD) is one of the oldest programs for the deaf in the United States, having been in operation since 1829. Its present location is in north Columbus on a 130-acre site adjacent to the Ohio State School for the Blind. Included in its physical facilities are an elementary school, intermediate school, high school and vocational shops, gymnasium and recreation center, infirmary, and living quarters for students and several of the staff.

Enrollment. Enrollment at OSD for the 1968-69 school year was 255*. The maximum capacity is approximately 318. Figure 3 shows that the students' home counties are spread throughout the State with the highest proportion of students (relative to the total of 255) residing in counties not associated with large urban populations. Approximately 54 percent of the 255 student body attend OSD because there is no suitable program in the student's local area (see Table 2). This statistic parallels that presented earlie for OSSB and, like the OSSB figure, is attributable to one of the three factors upon which decisions for placement in Ohio's residential schools are made.

The average I.Q. for the most recent OSD student body was 86 with a range of 55 to 145, and a standard deviation of about 16.**

Educational Philosophy and Objectives. In a recent statement drafted for Battelle researchers, the school's educational philosophy and objectives were presented:

> The school was established and is maintained for the children in Ohio who are sufficiently hearing handicapped so as to need services beyond those of the regular public school.
>
> . . . For hearing handicapped children school must be more than the word normally implies. It must supplement the home, community and a host of other agencies that are part of the academic and non-academic world of hearing children. True education is not confined to the walls of the classroom, it is to be found everywhere, and carried forward by every person with whom the child comes in contact. For this reason it becomes the prime responsibility of teachers, cottage leaders, administrators, staff and, indeed, every individual who has contact with our children, to become part of their learning and growing process.
>
> Our responsibility reflects a philosophy which emphasizes the discovery and sympathetic development of all the talents of the child not only for the benefit of society but also for his own personal use and enjoyment of life. (Grover, 1969)

*Thirty-four of the 255 students are day students.

**The Leiter International Scale is generally utilized to obtain this measurement.

Curriculum. OSD operates a regular academic program from kindergarten through twelfth grade. In general, the educational program at OSD as stated by the superintendent:

> . . . provides for an oral environment for the child as much as possible by the use of speech, speech reading, residual hearing and auditory equipment. The environment of the classroom provides for the use of all of these forms as well as reading, writing, and manual communication when deemed advisable. Correct sentence patterning is emphasized with all methods.

Complementing the academic program are several vocational and prevocational programs. The latter are offered starting at about the fourth grade level to expose students to a variety of shop experiences, thereby enabling the students to become familiar with a number of different vocational areas and to develop an area of interest. The vocational program includes printing, shoe repair, woodworking, baking, business machines, home economics, drafting, tailoring, general shop, photography, and driver education.

Students in the secondary grades attend academic classes for about 5 hours per day. There are normally three academic periods and one vocational period. Students who complete the regular academic program receive a fully accredited high school diploma upon graduation. For those students who are unable to profit from the standard public school program, OSD offers a work-study program. (There were only 16 students participating in the program during the 1968-69 school year.) The work-study students in the program receive basic mathematics and English, but spend the larger part of their class time with instruction pertaining to daily-living skills and desirable work habits. Classroom study is alternated with a semester of job experience which provides the student with opportunities for applying the working and living skills learned in the classroom. (The work-study program is presently a terminal program, but preparations are in effect which will make certificates available to those students who complete the required combination of classroom work and on-the-job training.)

School Budget. The expenditures from State appropriated funds for school year 1967-68 at OSD are as follows*:

	Expenditure	Per Pupil
Administration and Instruction	$531,043	$2,074
Care and Subsistance	298,813	1,167
Operation, Maintenance, and Equipment	144,820	566
Total	$974,676	$3,807

*Expenditure information obtained from administrative staff of OSD.

FIGURE 3. HOME COUNTIES OF STUDENTS ENROLLED AT THE OHIO SCHOOL FOR THE DEAF FOR THE 1968-69 SCHOOL YEAR

Based on data obtained from OSD.

TABLE 2. STUDENTS' PRIMARY REASON FOR ATTENDING OHIO SCHOOL FOR THE DEAF[a]

Reason/Category	Number of Students	Percent
Student's family lives in Franklin County (or nearby)	0	0
No program in student's local area	138	54
Parent's/student's desire	48	19
Student transferred to school because he/she could not "make it" in a nonresidential school (i.e., special day school, special class in a regular school, or standard class in a regular school).	55	22
Previously attended another residential school and/or entered OSD prior to 1960	14	5

(a) Data obtained from administrative staff of OSD.

The above figures include salaries, support, maintenance (including minor repairs), and equipment. Expenditures paid for with Federal monies have been excluded from the tabulation. With a total enrollment of 255 students, the per capita cost at OSD is $3,807. Clothing, transportation, and excessive medical expenses are expected to be paid by parents of the students.

Special Services and Programs. Beginning the summer of 1969, OSD will offer deaf students a 3-week program for academic enrichment and physical activity. (During the same period of time teachers will be able to enroll in a 2-week program for training in instructional materials and media.)

Another special program which is presently under development at OSD is the preschool program funded with Title VI, Elementary and Secondary Education Act (ESEA) of 1965. The program is structured for 2- to 5-year olds on an out-patient basis. Parents will bring their children to OSD to observe a specialized staff member work with the child on developing motor coordination, sensory awareness, and a greater capacity for participation in family activities. Long-range plans call for a preschool building at OSD with live-in facilities for the parents.

In addition to the regular academic staff, OSD employs the following specialists who fulfill the extracurricular needs of the students:

- A guidance counselor who works with students on interpersonal behavior, assists with job placement, and acts as liaison between the school administration and cottage parents.
- A full-time audiologist who directs a program of continuing re-evaluation and checks special equipment.
- A full-time psychologist who administers a psychological testing program and counsels students and cottage parents in interpersonal problems.

Routine medical care is provided by a dentist and pediatrician (shared with OSSB) and the services of several registered nurses. The infirmary at OSD is utilized primarily for isolation purposes. Serious medical problems at the school are referred to nearby hospitals. Whenever possible, students return to the school's infirmary for convalescence.

Some services at OSD provided by volunteers are a barber, a beautician, library assistants, a photographer, and hobby and crafts helpers.

Special Equipment. The special equipment at OSD consists of various sound-amplification devices and systems which allow the students to communicate better with one another and with their teachers. Most classrooms are equipped with microphone and headset systems, and individual aids are available to all students. A few of the classrooms have been acoustically treated to enhance use of the various auditory aids. Visual media are used in many of the classes to supplement regular instructional methods. The vocational shops contain a variety of industrial equipment.

Living Quarters and Recreation. Student living quarters consist of 11 cottages with a staff of 20 full-time adult cottage parents. The children are grouped primarily by chronological age providing each child the opportunity to share extracurricular time with children his own age. Cottage parents are quartered in rooms which are close to the children they supervise. On holidays and weekends, the students are encouraged to be with their families.

The athletic program at OSD involves the services of four full-time instructors who manage the physical education programs and coach several sports teams in varsity and junior-varsity competition. Extracurricular activities available to children at all age levels include clubs and play areas, nature study, hikes, dances, and cottage and social parties.

Special Day Schools

There are two special day schools for the deaf in Ohio – the A. G. Bell schools in Columbus and Cleveland. There currently are no programs of this type for the blind. In order to gain an appreciation of a special day school program, the A. G. Bell school in Columbus was selected for observation because its proximity to Battelle allowed a more thorough study of the school's operations.

Enrollment. The total program at the school has an enrollment of 232 children distributed in 30 classes. Many students (about 114) are in integrated classes located in nearby public schools. Of the 232 children, 125 are profoundly deaf and can be classified as slow learners. Most of the children reside in the Columbus School District with 85 residing outside of this area (see Table 3). These (85) students attend A. G. Bell on a tuition basis.

TABLE 3. DISTRIBUTION OF A. G. BELL STUDENTS RESIDING OUTSIDE OF COLUMBUS, 1968-69(a)

	Students	
County	Number	Percent
Franklin	56	66
Union	5	6
Pickaway	7	8
Gallia	9	11
Delaware	5	6
Fairfield	1	1
Hocking	1	1
Ross	1	1

(a) Data obtained from administrative staff of the A. G. Bell School in Columbus.

The average I.Q. of the student body is approximately 96, with a range of 57 to 157, and a standard deviation of about 17.

Educational Philosophy and Programs. The educational philosophy at A. G. Bell, as briefly stated by its principal, Mr. James Card, is to prepare the student to function well in the classroom rather than that of emphasizing advancement to a particular grade level. Instruction in speech and lip reading begins at the preschool level and is emphasized throughout the program. Any form of manual communication is discouraged. The students are integrated with hearing students whenever possible in the gymnasium, in the lunchroom, and on the playground at adjacent Huy Elementary and Medina Junior High Schools. An innovative change in this procedure is presently being evaluated with a class of seven youngsters. These students are receiving academic instruction with hearing children and regular teachers at Huy Elementary School, supplemented by special tutoring at A. G. Bell. The remaining students at A. G. Bell usually attend integrated classes after completing the sixth grade, if the students are judged capable of succeeding in this environment. Whenever possible, these classes are held in a neighborhood school of the student's residency. However, students (e.g., slow learners) who are judged not capable of functioning successfully in an integrated setting are placed in a class at A. G. Bell where the emphasis is on daily-living skills and written communication. These students are eventually placed in integrated classes in regular public schools where they generally enroll in nonacademic classes.

The overall integration plan is structured around a centralized concept. That is, A. G. Bell is considered the central or home facility, and Huy Elementary School, Medina Junior High School and several senior high schools are considered as educational extensions of A. G. Bell. In addition to these schools, there are six hard-of-hearing classes distributed at Indianola, Kingswood, and Parkwood Elementary Schools.

Staff. The educational staff at A. G. Bell numbers 30 including the principal and a curriculum specialist. During the 1968-69 school year, 15 of the 28 teachers were assigned as resource teachers to cooperating public schools with integrated classes. The teachers provide instructional support in academic areas and assist the student in other areas where problems arise as a result of his handicap. Although hired by A. G. Bell, the resource teachers report to both the principal of the regular public school in which their classes are located and to the principal of A. G. Bell.

School Budget. The estimated cost per pupil for the 1968-69 school year is presented below for the major categories of school operation and for the total expenditures.* These costs do not include the expenditures for students or teachers in the integrated classes outside of A. G. Bell.

*Expenditure data based on information obtained from the Assistant Clerk Treasurer of the Columbus City Schools.

	Expenditure	Per Pupil
Administration and Instruction	$166,177	$ $1,408
Operation and Maintenance and Equipment	45,318	384
Total	$211,495	$1,792

Enrollment: 118

Special Programs. A. G. Bell is currently involved in an innovative program for teaching oral communication through the use of the Verbatonal method. This method, conceived by Dr. Petar Guberina, emphasizes the utilization of low-frequency amplification and the rhythms of nursery rhymes and body movements to develop adequate articulation and perception of speech sounds.

Public Day Classes

A program for education of deaf and blind students may be established in any school district that satisfies program standards specified and administered by the Division of Special Education (Bowers and Bonham, 1966). The 1968-69 Directory of Special Education (Essex, Walter, and Bonham, 1968) reports 200 approved units for the deaf and 72.2 approved units for the visually handicapped, which are distributed in Ohio Counties as indicated in Figure 4. Most of the units are clustered within the larger urban areas of Ohio with Cleveland (Cuyahoga County), Columbus (Franklin County), and Cincinnati (Hamilton County) maintaining the largest number of special education units. Enrolled in the approved special-education units for the deaf are 1,551 students with an average I.Q. of about 96 and a range of 50 to 169. About 653 legally blind students with an average I.Q. of approximately 97 and a range of 50 to 169 attend special education units for the visually handicapped.* The home counties of these two groups of students are distributed as shown in Figure 5.** As might be expected, those counties in which special education units are located are also the resident counties for the largest number of day class students. Comparing the distribution of home counties of the total number of students attending both deaf and blind special education programs with the distribution of home counties of all state residential school students, reveals that counties not associated with large urban populations

*The Division of Special Education in Ohio does not maintain separate summary statistics on its legally blind students apart from its partially sighted students. The figure of 653 legally blind quoted above was obtained by cross-checking records made available by the Division of Special Education and the American Printing House for the Blind.

**Approximately 371 of the 653 students are in approved special education units and are depicted in Figure 6 according to their county of residence. The 282 remaining are in integrated situations with no designated support from special teachers and are depicted in Figure 7 according to the county in which they are receiving their education.

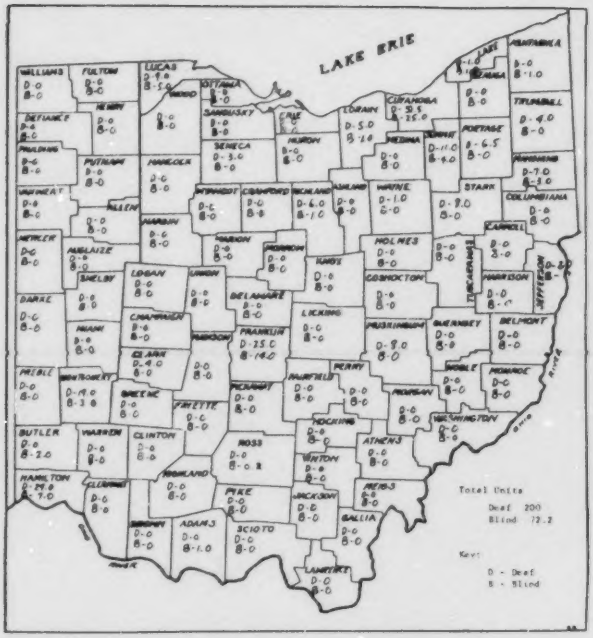

FIGURE 4. DISTRIBUTION OF APPROVED SPECIAL EDUCATION UNITS FOR THE DEAF AND FOR THE BLIND IN OHIO'S COUNTIES, 1968-69

Based on Essex, Walter, and Bonham, 1968.

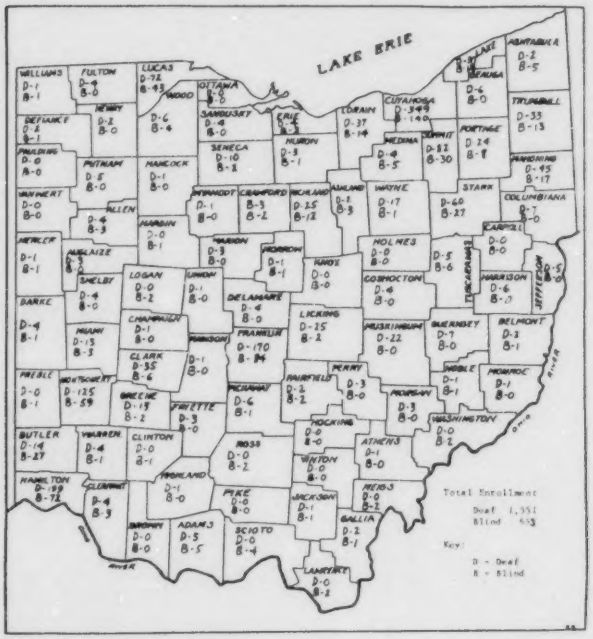

FIGURE 5. DISTRIBUTION BY HOME COUNTY OF DEAF AND BLIND STUDENTS ENROLLED IN SPECIAL EDUCATION UNITS IN OHIO, 1968-69

Based on information obtained from the Division of Special Education.

(i.e., Columbus, Cleveland, Cincinnati, and Dayton) are (proportional to population) more heavily represented in the residential school programs (see Figure 6).

The map in Figure 7 shows the distribution by home counties of all legally deaf and legally blind students in Ohio. Each county has represented on it those students attending the state residential schools as well as those in special education units.

Organizational Plans in Public Day Classes. Several organizational plans are being employed to satisfy the educational needs of blind and deaf children attending classes in Ohio's regular public schools. The following are typical of these plans:

Self-Contained Classes. Almost all of the school day of the student is spent in a specially staffed and equipped room. These children may attend other classes if they are able to, but they generally require a considerable amount of supervised instruction by special teachers. The typical pupil/teacher ratio in self-contained classes is approximately seven to one for the deaf and about ten to one for the visually handicapped (Bowers and Bonham, 1966). A regular school may have one or more classes of this type, particularly those regular schools in the urban areas where larger numbers of deaf and blind students reside.

Integrated Classes with Support from Special Teacher. Three types of plans are

(1) Cooperative Plan. The students are enrolled in a specially staffed and equipped room where they receive a portion of their education in a self-contained setting. The remainder of the school day is spent in regular classrooms.

(2) Resource Room Plan. Students are enrolled in regular classrooms, but come to the resource room for tutorial instruction as the need arises.

(3) Itinerant Teacher Plan. The children spend most of their school day in regular classrooms but receive special instruction from itinerant teachers who travel among two or more schools. These teachers help the regular teacher plan the educational program for the student, make available appropriate materials and give special instruction and guidance to the student.

The Division of Special Education in Ohio is currently moving toward the vision-center concept for the education of both the hearing and visually handicapped. This concept, which is presently being utilized in Akron, involves placing all hearing or visually handicapped children of a particular educational level in a small number of public schools, with specially equipped self-contained classes. Those who are capable of competing with normal students are integrated in regular classes on a part-time or full-time basis. They can return to the special class for instruction and/or tutoring if needed. The stated advantage of this situation is that special teachers, special materials, and a sufficient number of students for grouping are concentrated in areas for an effective program.

Program Costs. The financing of special education units for Ohio's hearing and visually handicapped children is in accordance with the current provisions of the School Foundation Program as fully described in the *Ohio Laws for Special Education* (Gibbons, 1968). Part of the cost for Braille materials is defrayed by the American Printing House for the Blind which distributes a quota of Braille books and other special materials at no charge to the school. In addition to this resource, as indicated earlier, the Central Registry for the blind at OSSB provides Braille materials, large type, and recorded materials on a loan basis to any special education unit in Ohio.

Cost-per-pupil figures for hearing and visually handicapped students attending special classes in regular public schools were not available for the Columbus area. Consequently, other large cities in Ohio were contacted for these statistics in order that a representative comparison among the several school situations could be made. It should be pointed out that no school district was able to report cost-per-pupil figures for the 1968-69 school year. Further, the expenditure categories included in the compilation of costs were not uniform among the districts. Table 4 shows a comparison of the approximate cost per pupil for the residential schools, the special day schools, and the day class program. The latter figures are based on average costs for five urban programs. These figures should be considered as rough estimates for the reasons mentioned above. However, they are presented to make relative comparisons among the various school settings (see Section IV), and should not be viewed as representing precise expenditures for any particular district. Efforts were made to restrict the day-class costs to operational expenses including transportation. It should be pointed out that transportation costs may vary widely depending on whether the blind or deaf students are transported separately or transported on a school bus with regular students.

Teacher Status and Salaries

Teacher Status. The status of teachers in approved special education units in Ohio has been evaluated by the Division of Special Education for the years 1966-69. Table 5 shows tabulations for teachers of the deaf and hard-of-hearing and for the visually handicapped according to their level of preparation and estimated annual need. More teachers of the deaf and hard-of-hearing are required than those for the visually handicapped because more students have hearing handicaps than visual handicaps. Table 5 also shows an estimated annual need of 40 teachers of the deaf and hard-of-hearing and 10 teachers of the visually handicapped.

FIGURE 6. DISTRIBUTION BY HOME COUNTY AND TYPE OF SCHOOL SETTING OF TOTAL NUMBER OF DEAF AND BLIND STUDENTS IN OHIO, 1968-69

Based on information obtained from the Division of Special Education and the two residential schools.

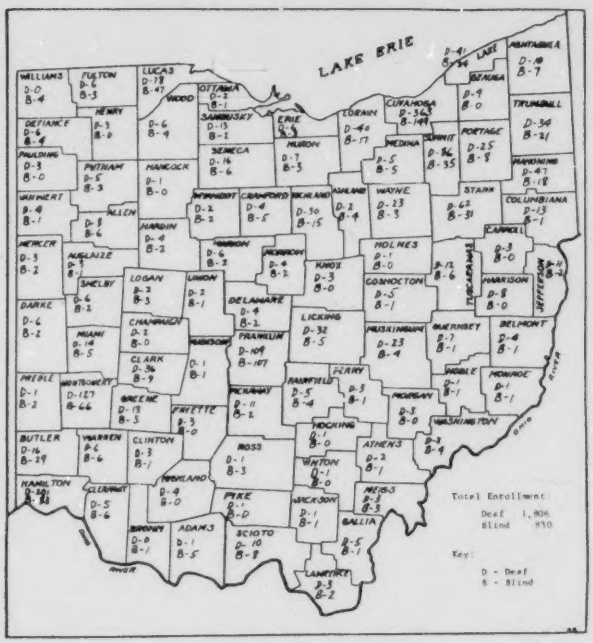

FIGURE 7. DISTRIBUTION BY HOME COUNTY OF ALL DEAF AND BLIND STUDENTS IN OHIO ACROSS SCHOOL SETTINGS, 1968-69

Based on information obtained from the Division of Special Education and the two residential schools.

Teacher Salaries. Teacher-salary schedules for the two residential schools and the Columbus public schools are listed by years of experience and degree level in Table 6. In general, the scheduled salaries for the State residential schools are higher than those for the Columbus public schools through the first 9 years of experience. At 10 years experience and beyond, the scheduled salaries for the State residential schools are lower, although not substantially, than those for the Columbus public schools. It might be noted that salary schedules for Ohio's residential school teachers are determined by Civil Service standards, whereas those for public school teachers are determined by the school district.

TABLE 4. APPROXIMATE COST PER PUPIL IN RESIDENTIAL AND DAY PROGRAMS[a]

Handicap	School Type: Residential	School Type: Special Day	Day Classes
			Range:
Deaf	$3,810	$1,808[b]	$1,121 to 1,892[c]
Blind	$3,540	--	$909 to 2,091[d]
Average	$3,675	$1,808	$1,528

(a) Efforts were made to obtain cost data for the same school year to permit comparison on a consistent basis. While most of the cost figures represent those for the 1967-68 school year, for various reasons data could not be obtained for this period for three of the school "systems". Specifically, the cost data for A. G. Bell, Columbus are for 1968-69, the costs for A. G. Bell, Cleveland are for 1966-67, and the Cleveland day-program costs are also for 1966-67. In order to adjust the latter figures (to allow reasonable comparison), an inflation factor of 5 percent per year was assumed, and factored into the cost data for these three school systems.

(b) Based on the A. G. Bell School in Cleveland and in Columbus.

(c) Based on Figures obtained from Cincinnati, Cleveland, Dayton, Toledo, and Youngstown for both deaf and hard-of-hearing. Figures include cost of transportation to and from school.

(d) Based on figures obtained from Cincinnati, Cleveland, Toledo, and Youngstown for both the blind and partially sighted. Figures include cost of transportation to and from school.

TABLE 5. STATUS OF TEACHERS IN APPROVED SPECIAL EDUCATION UNITS 1966-67, 1967-68, 1968-69[a]

Year	Approved Teachers	Certified	In Training
	Deaf and Hard of Hearing		
1966-67	189	115	74
67-8	206	161	45
68-9	226	166	60
Estimated Annual Need – 40 Teachers			
	Visual		
1966-67	72	40	32
67-8	76	54	22
68-9	72	56	16
Estimated Annual Need – 10 Teachers			

(a) Based on information obtained from the Division of Special Education.

TABLE 6. TEACHER SALARY SCHEDULES FOR OHIO RESIDENTIAL SCHOOLS AND COLUMBUS PUBLIC SCHOOLS (DOLLARS, ANNUALLY), 1969-70[a]

Years Experience	OSD and OSSB B.A.	OSD and OSSB M.A.	Columbus Public Schools B.A.	Columbus Public Schools M.A.
0	6,854	7,526	6,600	7,350
5	8,634	9,368	8,031	8,943
10	9,734	10,636	9,770	10,880
15	10,423	11,308	10,990	12,728
20	10,866	11,845	10,990	12,728

(a) Salary schedules for residential school teachers were obtained from the office of the Assistant Superintendent of School Administration, Ohio Department of Education. Salary schedules for Columbus public school teachers were obtained from the office of the Assistant Superintendent of Teacher Personnel, Columbus Public Schools.

III. THE EDUCATIONAL NEEDS OF THE DEAF AND BLIND

Conventional teaching methods attempt to employ the use of all the senses. In fact, both teaching and learning are accomplished primarily through vision and hearing. The loss of either of these senses poses a tremendous handicap not only to the student who has suffered the loss, but also to the capabilities of the educational system as well. In addition to the academic and vocational subjects generally thought to be the school's purview, the school system is obligated to assume (for the handicapped student) an even greater role than normal in the area of social learning, since the students are also handicapped in this area. The special needs imposed by these handicaps range from specially adapted materials to courses and guidance tailored to each individual.

The following pages list and briefly discuss the needs of the deaf and blind student – over and above the needs of the nonhandicapped student – as set forth in the literature* and as stated by nationally recognized experts, by administrators and teachers, and by the students themselves.

Needs of the Deaf Student

All needs which must be met in educating the deaf child are directly related to the problems of insufficient language development and inadequate receptive and expressive communication. The lack of these tools – the foundations upon which an education is built – is responsible for the low achievement typical of deaf children at every level of their educational career. Moreover, these problems significantly affect the social life and vocational life of the deaf person.

The hearing child is bombarded with language from birth and can, without formal instruction, usually learn the intricacies of correct word order, multiple meanings, singular and plural word forms, and tenses. He can also acquire a fairly substantial vocabulary and speaking ability. These skills are not developed in the prelingually deaf child. Because words are not heard, they cannot be easily imitated in speech. Moreover, because explanatory or context words are not heard and probably not understood, a basic vocabulary is difficult to establish. The association between a situation or action and its symbolic label is in the form of lipreading which, because of "silent", "sound-alike", and "look-alike" words, is difficult to develop and master. Thus, equipped with meager knowledge of language and a less than perfect means of acquiring it, the deaf child – already educationally retarded – enters the school situation.

*Literature which was particularly helpful in this regard was: American Foundation for the Blind, Inc., 1953; Haines, 1965; Jones, 1969; Lowenfeld, 1945; Olsen, 1963; Peck, 1955, Quinn and Gockman, 1967 (for the blind); and Babbidge, et al., 1965; Brill, 1959; Hoemann, 1965 (for the deaf).

To provide the deaf child with the information obtained formally or informally by his hearing peers, the following needs must be satisfied: early education of child and parent; special personnel, equipment and materials; vocational guidance and preparation; and instruction in social and personal living skills. Probably the most important of these is the need for early education. As the deaf child grows older, the gap between his language development and that of hearing children steadily increases. To overcome this gap, training and education must begin as soon in the child's life as possible. Teaching personnel and equipment are, of course, the basic means through which language and communication are taught and must be available if the instructional program is to survive. Without these necessities, the other needs listed could not be fuifilled. Vocational guidance must be available to provide information that will enable the student to choose a suitable and satisfying area of work. Skills in social interaction are equally important to allow the deaf individual to have the basis for contact with the hearing world in which he lives. Each of the foregoing needs is discussed briefly in the following paragraphs.

Early Education of the Child and Parent

The handicap of deafness requires the education of both the preschool child and his parents. For the child, training at an early age facilitates language development by increasing an almost nonexistent vocabulary and by establishing the meaning of basic abstract concepts. It is important that training in an effective mode of communication and in the use of residual hearing, both of which aid further education, be started. In addition, the preschool experience shapes certain behaviors that are desirable for the child to have upon entering the first grade.

Education of the parent is necessary because most parents do not understand, and cannot cope with, the problems of deafness. A teacher or counselor should be available to explain the implications of the handicap and to make parents aware of what realistically can and cannot be accomplished by their deaf child. Also, parents can be instructed in how to communicate with their child and how to develop his basic concepts.

Although the legal minimum age for instructing a deaf child in a public school is 3 years, education and guidance, particularly for the parents, is required earlier. Every attempt should be made to provide such services as soon as it is determined that a child is deaf.

Personnel, Equipment, and Materials

Achievement of necessary language skills requires the services of qualified personnel, and suitable equipment and

materials. The special-education teacher who directs a unit of deaf children must be knowledgeable in the essentials of lipreading and speech and in the training of residual hearing. In addition, skill in using and caring for special equipment is essential.

In the event that a deaf child is placed in a classroom with hearing students, the tutoring services of an itinerant or resource teacher are usually necessary. This teacher also serves as an advisor to the regular classroom teacher regarding the use of appropriate instructional methods and the student's capabilities and special needs.

In addition to teaching staff, the services of supportive personnel who are acquainted with the implications of deafness are highly desirable. The psychologist performs the necessary function of intellectual and personality assessment and provides the teacher with specific suggestions regarding any learning or behavior problem. The audiologist's report establishes the severity of hearing loss and indicates if, and at what frequency range, sound is perceivable. Yearly tests show whether or not the hearing loss has changed. Counselors who are knowledgeable regarding problems faced by deaf students should be available for advice and guidance in areas of social, personal, and vocational concern.

For teachers to obtain the best results possible, special equipment and materials are essential. Included on this list are individual and group hearing aids, loop systems that eliminate extraneous sounds, sound-producing devices for discrimination training, slide and movie projectors, overhead projectors, slides, films and transparencies, and classroom and supplementary material designed for the interest and reading ability of each grade level. Equipment and filmed material are available through Captioned Films, a service of the U.S. Office of Education. The acquisition of reading matter designed specifically for deaf students poses a more formidable problem, however. Because the reading level of most deaf students is several years below that of their interests, it is difficult to find texts and supplementary materials suitable for use. Unfortunately, this situation will exist until educators who are cognizant of the problems faced by the deaf population utilize their talents to produce the needed materials.

To satisfy the constant need for equipment and materials, an instructional media center such as the excellent one established at the Illinois State School for the Deaf should be considered. The role of the media center, as it is defined in Illinois, includes in-service training for teachers in the preparation and use of materials, distribution of commercially prepared material, and production of audiovisual aids to supplement media obtained commercially or produced by the teachers.

Vocational Guidance and Preparation

Numerous studies (Bigman and Lunde, 1959; Boatner, et al., 1964; and Kronenberg and Blake, 1966) have consistently reported the deaf population to be underemployed. That is, they are employed in occupations that are grossly below their actual capacities to perform. To some extent this is apparently due to the reluctance of employers to hire deaf individuals. However, underemployment may also be related to inadequate preparation and vocational guidance.

The necessary functions of the school counselor and/or the Vocational Rehabilitation representative as they relate to deaf students are extensive. In addition to informing the student as to what aptitudes and abilities he has, the counselor should offer and suggest realistic options in the employment field. Various descriptions and requirements should be generally available for the knowledge of all students, and the deaf should be encouraged to enter fields in addition to those traditionally open to persons with a hearing handicap.

A deaf person requires more help in acquiring skills which relate to obtaining and holding a job. Practice is needed in writing letters of application, filling out necessary forms, taking tests, communicating with supervisors and fellow workers, and using on-the-job vocabulary. The responsibilities as well as all the benefits of accepting employment must be understood.

Because of the many problems involved in obtaining employment, the deaf person requires the services of a knowledgeable placement officer. The duties of this officer should extend beyond that of placement to include explanations to the employer regarding what to expect and how to handle certain situations, and discussions with the employee to resolve problems and misunderstandings related to the job or fellow workers.

Almost all the occupationally oriented courses in residential and local schools are, in fact, prevocational; that is, they give experience in certain occupational areas but do not prepare a student for immediate employment upon course completion. Because of the communication problems encountered by many students in on-the-job training, and the time ane expense of retraining, it behooves the school program to offer to the student those prevocational courses that promise to provide fruitful employment.

Social Living Skills

The deaf student needs to develop basic skills that will allow him to express himself through spoken and/or written language, as well as to understand the replies of others. Even if a child is surrounded during the majority of his lifetime by other deaf persons and does not need to use speech skills extensively, he will be confronted with situations that demand interaction with hearing persons. Thus, it is necessary that ample opportunity for social relationships with the hearing public be made available by the educational system. The encounters need not be on a competitive classroom basis, particularly in the earliest years of education.

However, a continued program of social interchange along with guidance, encouragement, and reinforcement will furnish important knowledge and skills to promote more confident and numerous exchanges with the hearing population.

In addition to an adequate foundation in language skills and communication techniques, it is important for the deaf child to know what to say and do in a particular situation. Special effort on the part of the schools must be made to teach socially accepted behaviors in dating, marriage, child rearing, community relations, and job-related activities. Teaching the effective use of tact is especially difficult since even if numerous interactions are available, the subtle feedback concerning the feelings of others goes unnoticed or cannot be interpreted by the deaf person.

Needs of the Blind Student

The problems encountered in the education of blind children centers about two equally important needs. First, special materials and skills are necessary if the student is to acquire a basic education comparable to that of his seeing peers. Second, training in mobility and travel is essential to allow the individual to be independent of another's assistance, and to increase occupational and social opportunities. Next in relative importance is the need for vocational guidance in directing the blind student toward realistic occupational choices – thereby reducing the need for retraining – and developing skills in maintaining social relationships with both blind and sighted individuals. In addition, skills related to effective use of study aids, and opportunities for directed physical activity are important needs which should be satisfied by any complete program for educating visually handicapped children. These factors, which represent needs beyond those of the normal sighted student, are briefly discussed below.

Personnel, Equipment, and Materials

For the blind child to acquire an education comparable to that of his seeing peers, he requires the services of qualified personnel and the use of special equipment and materials. The absence of such key elements may greatly hinder advancement in classroom work.

Specially trained teachers are essential to instruct the blind child in the basic skills of listening, reading and writing Braille, and fully utilizing available tactual and auditory stimuli. The teacher must be acquainted with learning problems related to the handicap and have skill in correcting them. In addition, she must serve as a liaison between the child and teachers of regular classes where the child is enrolled. It is also desirable that special teachers or teachers having some relevant experience be available to offer their services to blind children in the areas of physical education, crafts, music, and vocational training. As noted in the literature (Dauwalder, 1964), these subjects are all too often not provided to blind students, particularly in public schools. Because regular classroom teachers feel inadequately prepared or are unwilling to accept the challenge, blind students are frequently forced to follow a strictly academic curriculum that avoids or is routed around courses requiring laboratory work and manual manipulation.

In addition to teachers, the services of supporting personnel are helpful and often essential to the efficient use of teacher and pupil time. Braillists, who transcribe printed materials into Braille form, are particularly useful in situations where the text used by a regular class is not available in Braille and when supplementary study materials or tests are given to the class. With the assistance of a Brailling service, the blind child is able to remain current in daily lessons without undue concern on the part of the teacher.

Teachers' aides, employed on a part- or full-time basis, have proven to be of value to both the special education teacher and her students. The aides are generally utilized in the performance of clerical jobs, such as record keeping, equipment preparations, and materials duplication. They may, however, assist in such classroom activities as drill work, monitoring tests, and aiding children with crafts projects. Because an aide is available, a teacher is able to give her concentrated attention to individual children when they need it without neglecting the progress of the remaining students.

In addition to the services of teaching and supporting personnel, special equipment and materials designed for use by blind students are essential. The most basic apparatus is, of course, the Brailler which produces printing through raised perforations on the special paper provided. The more portable slate and stylus, although more awkward for younger children, are also basic tools for printing Braille. Tape recorders, phonographs, and talking books supply the blind student with the opportunity to develop good listening skills. The use of an ordinary typewriter in the upper elementary and high school grades eliminates the necessity of having the resource teacher grade or translate work done in Braille. Models of real objects such as cars and trees, as well as specially designed aids such as raised relief maps are necessary equipment for a program of educating blind students.

For a blind student to receive instruction in an integrated classroom, it is necessary that the same materials used by seeing students be provided in Braille form. Non-required books and magazines which are appropriate for the age and ability levels of blind children should occupy a significant portion of the Braille library. Easy access to such material is an encouragement to improving reading skills and provides a worthwhile leisure-time activity.

Orientation, Mobility, and Independent Travel

The blind child, from the time he becomes fully mobile, needs guidance and training in orientation and travel skills. This training involves teaching the child to perceive and orient to his environment through the full utilization of the remaining senses, including audition, olfaction, and kinesthesis. Formal instruction, which should be started during the late elementary grades or junior high schools, enables the student to move about independently in the home and neighborhood. On successful completion of such instruction, the blind traveler is able to confront the problems of pedestrian travel in a busy downtown area.

The primary benefit of mobility skills is that they allow freedom to act and move about independent of another person's assistance. The nonmobile blind person is severely limited in his choice of occupations; indeed, the opportunity for any employment is reduced. The factor of mobility has been found to be closely related to whether or not a blind person is self-supporting (Haines, 1965), and provides the basis for better control of the environment as well as greater social involvement (Quinn and Gockman, 1967). The latter study provides support for the suggestion that mobility training can and should be initiated at the grade-school level. The investigators concluded that if delayed until the completion of a child's education, "... the accumulation of years of dependence, neglect, ignorance, and possible indifference may become insurmountable". In addition, the introduction of travel abilities at that level will coincide with interests and capabilities, making independent travel more meaningful.

Before a formal travel-training program can begin, the parents as well as the child must be convinced of the benefits that will result. Overprotective parents often convey to their child and to others that, because of the handicap, the child cannot or does not have to act independently. Likewise friends who are readily available to offer assistance in travel may reinforce the idea that the ability to move about alone is not necessary. In these cases, counseling sessions with both the parents and student are advisable.

Vocational Guidance and Preparation

Even more than sighted children, the blind child requires special vocational guidance and information. The individual with no vision needs to know what aptitudes and abilities he does possess and what realistic employment opportunities are available to someone with his capabilities and limitations. The best sources of this information are school counselors who are more than casually familiar with the unique problems of the blind population, and/or Vocational Rehabilitation representatives who can also arrange for additional services.

Details of jobs such as chances for advancement, salary, fringe benefits, working conditions, and actual task descriptions should be available to the blind student to enable him to make a decision based on fact rather than on ignorance or assumption. The school should provide this information through classroom and individual guidance sessions and by arranging on-the-job visits and talks by persons representing various occupations.

In addition to guidance, it is highly desirable for the blind student to be exposed to prevocational and vocational courses which provide a sampling of occupation tasks and which may be used later to provide a means of support, aid everyday living, or furnish constructive leisure activity. Typing, industrial arts, and home economics are examples.

Personal and Social Living Skills

In addition to the basic skills which are necessary for academic development, the blind child requires training in efficient personal and social living skills to assist him in adjusting to his unique problem. The need for such training is noted in several studies (Cook, 1961; Haines, 1965; Rawls and Rawls, 1968) which surveyed the opinions of former students. The ultimate goals of this training include ease in relating to the environment, an ever-increasing ability to establish good relationships with other people, and the cultivation of self-accepting attitudes.

Well-developed skills in orientation and mobility, communication, and everyday activities, such as eating and homemaking, provide a direct means of establishing a comfortable association with physical surroundings. However, the problem of accomplishing easy relationships with people, and developing healthy attitudes in the blind child presents a challenge that does not easily lend itself to standard classroom procedures. So that he may learn appropriate behavior in dealing with other people, the blind child must be provided continuous exposure to increasingly more complex social situations with an ever-increasing assortment of personalities. In this way, experience is obtained in such activities as effecting meaningful conversation, learning to request and refuse assistance gracefully, and in explaining the handicap and its implications.

Blind children need to know the value of neat appearance, good grooming, and freedom from "blindisms"* in establishing social relationships. Through either formal or informal means, the visually handicapped student should be made aware of these factors and how sighted persons may respond to them, and a systematic plan should be effected to achieve the desired end.

The attitudes of the blind child toward himself and his handicap play an integral part in the ultimate outcome of

*Traits such as swaying, tapping, and quick involuntary eye movements which are commonly found among blind persons.

the programs in orientation and efficient living skills. Educators note that the attitudes of parents toward a handicap to a large extent influence how the child will regard his situation. For this reason it is important that adequate counseling services are available not only to answer questions raised by interested parents, but also to seek out all families with a blind child to provide them with basic information concerning the handicap and what achievements are possible through the educational programs available.

Study Habits and Use of Special Aids

The blind student needs to develop effective and efficient study habits and to become proficient in the use of special aids. These needs derive from the fact that the use of Braille requires a considerable amount of time – approximately two to three times as long as that needed by a sighted person to read printed matter. To date, no more-efficient method has been produced to reduce the time. The practice of organizing materials and aids so that they might be located easily and quickly is essential, as is taking careful note of assignments and completion dates. The operation and care of typewriters, Braillers, tape and record devices, language masters, and optical aids should be taught by the instructor to enable the student to function independently of another's assistance.

Good listening skills are an asset to the blind child who has less access to lecture and discussion notes than sighted students. Instruction that trains the student to recognize patterns of organization and key points from spoken language is highly desirable in any program for visually handicapped children.

Physical Education

While physical education is important for all children, it is especially important for those who are blind, and to be most effective it should be coordinated with instruction in orientation and independent travel. Lack of vision greatly hampers attempts to move about and provides no feedback regarding posture and movements. The obvious benefits derived from a program of physical education include development and maintenance of muscular tone, physical coordination, and improvement in posture. In addition, mannerisms such as shuffling can be replaced by well-paced, more-certain movements. Consequently, a planned program of physical education, which is adapted to the unique problems of a blind child, is highly desirable. The program need not involve the purchase of numerous pieces of expensive equipment. Rather, regular gymnasium items can be utilized if special instruction in their use is given. If special equipment is available, however, it can be used also by sighted children to improve similar problems they may have.

Because the blind student would ordinarily be excluded from participation in sports activities, a physical-education program provides an opportunity to acquire such skills and to use them in competition with other students. Wrestling, track and field activities, and weightlifting are examples of sports in which blind children can compete. Swimming provides an opportunity for competition for both boys and girls and is probably the best physical exercise available.

A Summary – Needs of the Deaf and Blind

The school-age child who is either blind or deaf requires the satisfaction of a unique set of needs. The school system, in meeting these needs, must make special provisions in the areas of academic, vocational, and social instruction.

Both the deaf and the blind student require the talents of specialized teaching personnel, supportive personnel, and the use of sensory aids and specially adapted materials. Further, because of the limitations of their handicap and less exposure to the details of employment, both groups need guidance in selecting, preparing for, and obtaining satisfying jobs. Also, both require special instruction and real-world exposure to develop skills desirable for satisfactory social relationships with nonhandicapped as well as other handicapped persons.

In addition to the above-mentioned needs, blind students find the need for mobility and travel to be of primary importance in acting independently of another's constant assistance. An adequate physical-education program provides a means of maintaining physical health while eliminating certain characteristics often found in the blind population. The acquisition of good study habits and skill in utilizing study aids enables the student to make the best use of the time available to him.

Unlike blindness which reduces one's contact with "things" in the physical environment, deafness decreases contact with people. Besides the needs listed above, the deaf child requires an opportunity to develop language and communication skills from the earliest possible time. The understanding and early cooperation of parents are paramount in accomplishing this.

IV. ASSESSMENT OF THE PRESENT EDUCATIONAL SYSTEM

As indicated in the Introduction, this study is directed primarily toward assessing the role of the residential schools in educating the deaf and blind. But, the role of the residential school cannot be evaluated meaningfully in a "vacuum". It is recognized, of course, that it is certainly possible to make an "absolute" evaluation of the residential schools, and that such evaluations are in fact performed.* However, the latter approach does not serve the needs of the present study. More to the point, an examination of the residential schools without a consideration of alternative educational plans – both existing and potential – would not answer the basic question of where and how the needs of Ohio's deaf and blind children can best be served. As also noted in the Introduction, the study is not directed toward an investigation of curriculum or teaching methodology. However, the considerations of curriculum and methodology cannot, for purposes of this study, be entirely separated from the issue of where education should be provided. That is, the determination of whether a particular type of educational setting meets the needs of deaf or blind students is clearly, to some extent, a function of the nature of the program provided, i.e., the curriculum and methods employed. As indicated in Section III, the educational needs of the deaf and the blind are different and while one type of educational setting may be best for the deaf, a different setting may be best for the blind. Thus, the paragraphs below discuss the alternative organizational plans (or educational settings) and consider their advantages and disadvantages in the context of meeting the differential needs of the deaf and blind.

As indicated previously, considerable controversy surrounds the issue of where and how the deaf and blind should be educated. Two opposing schools of thought emerge in the literature. One group generally argues in favor of the residential program, while the other group argues equally hard for the day program. And, the same factor that one group cites as an advantage is frequently claimed to be a disadvantage by the opposing group. In general, the arguments on both sides of the issue are based primarily on expertise, judgment, emotion, and opinion. While some research bearing on the issue has been done (as summarized below), it is by no means conclusive, and each group tends to cite those studies that support or favor its contentions. Further, the arguments of either side often appear both rational and convincing until the other side is heard. While the dichotomous positions (i.e., residential versus day programs) are in the forefront, the middle-ground view is also in evidence – particularly among those that are not directly involved in the day-to-day education of the deaf and blind. The middle-ground position is slowly gaining attention within state departments of education, and some of the alternatives presented in a subsequent section of this report are out growths of this view.

*For example, the National Accreditation Council for Agencies Serving the Blind and Visually Handicapped publishes a "Self-Study and Evaluation Guide for Residential Schools" (Scholl, et al., 1968).

The advantages or disadvantages that follow are based on what is frequently presented in the literature, and on the interviews and observations carried out in connection with the present study. The works of Babbidge, et al., 1965; Abernathy, 1964; Kirk, 1962; Motley, 1960; Buell, 1953, were particularly useful in preparation of the material presented below. However, it should be borne in mind that what is cited by some as an advantage is often considered to be a disadvantage by others. It should be added that these advantages/disadvantages are those that have been reported, and do not in all cases represent the views of the research team.

Advantages and Disadvantages of Residential and Day Settings

Residential Schools – Advantages

- The residential schools provide specialized programs, teachers, facilities, equipment, services, and small classes offering individual attention to students.
- Many rural areas have an insufficient number of deaf or blind students to justify or establish a special local program. The residential school, to a large extent, serves as an education center for students that do not reside in areas with local programs.
- The administrative, organizational, and teaching staffs of residential schools are concerned solely with the educational needs of deaf and blind students.
- The residential schools offer a full-time, well-graded, diversified program covering academic, prevocational, and physical education – specially geared toward the characteristics and problems of the deaf and blind.
- Residential schools can frequently offer deaf and blind children from disadvantaged homes better nutritional and medical care, a more favorable physical surrounding, and a better environment for study than that provided in their homes.
- The student in a residential school, being surrounded by those who are similarly handicapped educationally and socially, is under less pressure, and is in a less threatening environment, than that of a regular public school.
- The residential schools offer intensive programs designed to train students to cope with or overcome their handicaps, e.g., language and communication for the deaf, and orientation and mobility training for the blind.

Residential Schools – Disadvantages

- Most students attending residential schools are separated from their families during much of the school year.
- Students are generally isolated from community life, and in practice the residential programs do not adequately prepare their students for entering the "mainstream of society".
- State requirements or standards for cottage parents do not exist at the present time, and selection is often based on availability. Cottage parents receive only limited training and are generally ill prepared for their responsibility for much of the day-to-day care of students.
- In general, residential schools provide little opportunity (or preparation) for the integration of their students (on an individual basis) into day programs for any part of their education.
- In a residential program, the social and sexual problems of adolescence are generally handled, guided, and controlled by the school staff rather than by the family or church.
- Because of the distance factor, discussions with the student's family regarding his progress or problems are generally infrequent.
- The cost per student in a residential program is significantly greater than that in any type of day program.

Day Classes – Advantages

- The day-class approach in most cases permits the student to remain with his family and provides him with the opportunity to socialize with the nonhandicapped and to participate in community life.
- The special-class approach provides ample opportunity for placement of students (on an individual basis) in regular classes for some of their instruction. Further, placing students in regular classes on a trial basis can also be carried out readily.
- Students in self-contained special classes have the opportunity to mix regularly with normal students for recreation and other school activities. To a significant degree they are in the mainstream of school life.
- The day program offers a greater variety of subjects at the secondary level and provides better preparation for college.
- The integrated-class approach offers the maximum opportunity for relationships between normal and handicapped students, thereby enhancing prospects for further educational opportunities and interaction with a seeing-hearing society.
- Both the special- and integrated-class approaches allow seeing and hearing students to become familiar with their deaf or blind classmates. Regular students often learn that the handicapped are more like than unlike themselves. Such interaction potentially enhances prospects for greater receptiveness of the handicapped in later life, particularly with respect to employment.
- For a deaf child, attendance at a regular school encourages the use of oral communication.
- For a blind child, attendance at a regular school encourages independent travel.

Day Classes – Disadvantages

- In many rural areas, the low incidence of deafness and blindness does not permit the establishment of well-graded classes at the local level. A frequent result is the situation in which children widely varying in degree of handicap, ability, and age are placed in the same unit or special class. Moreover, the students are often exposed at most to only a few teachers during their school careers.
- Handicapped children in the day program are often given passing grades and promotions simply out of sympathy or because they tried hard.
- For the deaf, emphasis is placed on oral communication at the expense of the academic program.
- For the blind, little training in orientation and mobility is provided.
- The handicapped, as a minority in a regular school, get insufficient supervision and attention from the principal, who is concerned primarily with the regular student body.
- Expensive special-equipment items are often not available because the small number of deaf or blind children in the school do not justify the expenditure.
- Handicapped children in a regular school are often not permitted to participate in physical education or vocational (shop) classes due to concern over their safety.
- Some regular class teachers are not receptive to having handicapped students in their classes.

Special Day Schools

It will be recalled that Ohio has two special day schools, both of which are for the deaf.* In general, these schools are considered to have most of the advantages of both the residential and day-class programs, but few of their disadvantages.

A few of the major arguments for and against the special day school as contrasted with the residential and day-class settings are presented below.

Advantages

- As compared with residential schools, the day school also provides specialized instruction, equipment, and facilities, but without separating students from their families or community. Further, ample opportunities exist for integrating deaf in classes with hearing students in nearby regular schools.
- Because students generally reside in the area in which the day school is located, as compared with a residential school, there are greater and more frequent opportunities to involve parents in matters concerning the educational progress and problems of their children.
- The day school can generally offer a well-graded academic program, that cannot be provided by most day-class programs. Further, the day school principal and other staff members can devote their entire attention to the educational needs of the handicapped.

Disadvantages

- Due to the fact that day schools require a relatively large population of handicapped children to justify and support their operation, these schools are located in urban areas – in effect, generally precluding entry of the rural handicapped student.
- In order to place their students in an integrated academic or prevocational class, the day school must have the cooperation of regular schools.

The advantages and disadvantages cited above clearly have implications for the degree to which the residential and day settings can meet the needs of the deaf and blind. Unfortunately, the question of whether an item is, in fact, an advantage or disadvantage, in most cases, has not been subjected to systematic research. The fact that deaf or blind students in residential schools are surrounded by others similarly handicapped is cited by some as an advantage. But, others argue that this is a disadvantage because it reinforces and encourages the segregation of the deaf and blind in later life. Irrespective of whether the items listed constitute advantages or disadvantages, ultimately the question that must be answered is, "What differential effects, if any, do they have on the student end product?" More specifically, it would appear that the fundamental question relates to whether there are any actual differences in such factors as student accomplishment or their characteristics as a function of the type of educational setting they attended. Such factors as educational level attained, the proportion that go on to college, psychosocial development, and occupational status have been suggested as criteria for evaluating the relative effectiveness of current educational settings. In addition, communication ability of the deaf and independent-travel ability of the blind are also considered important for purposes of evaluation.

Surprisingly, few systematic attempts have been made by either residential or day-program personnel to obtain follow-up information on their graduates or dropouts. Further, a review of the literature revealed that few studies have attempted to investigate empirically the relative effectiveness of residential and other public school settings. In analyzing their data, researchers often fail to report results in terms of the type of school attended. In other cases, this information is presented incidentally rather than as a major finding. However, the few studies that were found that bear directly or indirectly with the assessment of different types of education settings are presented and discussed below.

A Review of the Literature

Effectiveness of Educational Settings for the Deaf

Apparently the only research which has specifically attempted a comparison of residential and day systems on several variables is that of Quigley and Frisina (1961). To isolate the effects of institutionalization, the investigators used 120 day students and 120 boarding students, all of whom attended residential schools. The two groups were equated on educational environment, sex, chronological age, length of time in school, intelligence, type and degree of hearing loss, and age of onset of hearing loss. Measures of communication ability, educational achievement, and psychosocial adjustment were compared for the two groups. Quigley and Frisina found significantly higher performance for day students in speech and speech reading. The two groups were statistically similar on measures of finger spelling, vocabulary, educational achievement, intellectual adjustment, and physical adjustment. In measures of psychosocial

*To the knowledge of the investigators, there are no special (public) day schools for the blind in the United States.

adjustment, male and female resident students and female day students were similar overall. Male day students, however, consistently showed more behavior problems and more problems associated with social adjustment. Further, a test of the emotional traits of both the resident and day students found the male day students to have more emotional problems than any other group of deaf students. It should be noted that all the deaf students were significantly different from hearing students on whom the test was standardized. This suggests that deafness has a greater influence on emotional adjustment than does type of school placement.

In an attempt to explain the differences in speech performance, the data on 16 day students who had deaf parents were compared with those of 70 day students having no deaf members in their families. Significant differences in speech emerged in favor of the 70 with no deaf family members. This was attributed to the "oralness of environment" by the investigators who reasoned that the day children with hearing parents were forced to use speech-related skills more than those who had deaf parents. The group with deaf parents showed significantly higher performance in finger spelling and vocabulary, and in addition, they performed better in educational achievement although the scores were not statistically different.

Overall, Quigley and Frisina found no evidence that a residential school setting is generally detrimental to the development of deaf children and indicated that such an environment is not identical to that termed "institutional". In addition, the data suggest that greater exposure to an oral environment may increase speech-related skills.

Investigations of the achievement of deaf students consistently report a low level of attainment (Hester, 1963*; Babbidge, et al., 1965; Denton, 1965; McClure, 1965; Schein and Bushnag, 1962). The average grade level reached by nongraduates approximates 4.5, while graduates typically are reported to be functioning at the eighth-grade level academically. The following studies relating to achievement provide a means of comparing the relative level and type of achievement of the residential-school student with the day student.

Boatner (1965)** surveyed 88 participating schools, which enrolled 93 percent of all deaf in U.S. special programs, and presented data on 1,277 sixteen-year-old students who had left school. Of the 1,145 from residential schools, 39 percent received diplomas with a Stanford average of 8.2 years and 30 percent obtained vocational certificates with a Stanford grade average of 5.3. Of the 132 school leavers from day schools, denominational and private schools, 61 percent received academic diplomas; however, the reported Stanford average was one grade lower (7.3) than that of the residential students. Only 10 percent obtained vocational certificates, and their achievement was similar to the residential school group (5.0). Likewise, the proportions of those receiving attendance certificates or no certificates were comparable.

A study by Leshin and Crawford (1963) which investigated the Ohio program for education of deaf and hard-of-hearing children was brought to the attention of the present researchers. The study was sponsored by the Division of Special Education, and data were gathered on medical, audiological, psychological, and educational factors for both residential and day-class students. Plagued by inconsistent reporting procedures and a lack of uniform test instructions, the study was never published and a complete copy of the final report could not be obtained. Personnel at the State Division of Special Education indicated, however, that the results in achievement were similar for both groups, which is generally consistent with other research findings.

The Babbidge Report (1965) to the Secretary of Health, Education, and Welfare presents the profile of an entering class of Gallaudet College. It reports the achievement of residential school and other public school graduates, and the need for further preparation of both. Of a total of 95 entering residential school graduates, only 13 percent enrolled directly in the freshman class, with the remainder entering the preparatory class. On the other hand, 43 percent of the 21 students from day programs were able to enroll directly in a freshman class. Measures of achievement in reading, language, and mathematics are presented. Students from public residential schools tested a full grade lower in reading and one grade higher in mathematics than students from day schools and classes. Achievement in language skills was similar, however. The data above indicate that the ability to enter directly into the freshman class appears to be due in part to the better reading preparedness displayed by students from day schools and classes.

The most recent research dealing with education environments has been presented by Quigley, Jenné, and Phillips (1968). The investigators attempted to determine what, if any, relationship exists between what an individual acquires in a particular type of school and how he fares occupationally, socially, and maritally as an adult. Of the total of 457 respondents classified as deaf, 28 percent attended day school or classes and 11 percent received their education in combined system residential schools. The remainder attended regular public school, oral residential school, or some combination of residential and day class setting.

Although the investigators compared five different groups overall, the data of two groups is of special interest to the present study.

- Group A (Oral) – These respondents held at least a bachelor's degree from a regular college or university. They had attended mostly oral residential schools, day programs, or some combination of these.

*As cited in McClure, 1965.
**As cited in McClure, 1965.

- Group E (Combined System Residential) – These respondents were graduates of Gallaudet College who had attended graduate school in other institutions of higher learning. They had attended mainly combined system residential schools.

A comparison of these two groups indicates that the number of male professional workers was comparable for Group A (85 percent) and Group E (93 percent). An analysis of the latter group, however, reveals that almost half were teachers at schools for the deaf, while only 11 percent of Group A were. Comparable proportions were found for female respondents.

A comparison of the average annual incomes reported by the deaf respondents indicates similar figures for the males in both Groups A and E. Females in Group A (oral), however, earned an average of $2,600 less than those who had attended Gallaudet (Group E).

An analysis of data relating to marital status shows considerable differences in the percentages of deaf persons marrying a normal hearing spouse. Twenty-six percent of Group A, who had an oral background, married hearing persons, while only seven percent in Group E, with a combined system-residential training had hearing spouses.

Data on the social interaction of the deaf respondents show little difference between the two groups in membership in clubs with normal hearing members, although former students of combined system residential schools more often held membership in clubs with deaf members. When asked about the hearing ability of close friends, nearly half the respondents with an oral background indicated that most of their friends had normal hearing, while another one-third reported having an equal number of hearing and deaf friends. About one-third of the former residential students also stated that they had as many hearing as deaf friends. The remainder reported that most of their friends had hearing deficiencies.

The respondents were asked to comment on their abilities in speech and lipreading and to indicate how important these skills were to academic and social success in college. A consistent proportion of Group A, which had attended day educational settings and/or oral residential schools, reflected the importance of these factors. About 90 percent felt that others understood most of what they said, that ability to speak was at least somewhat helpful for academic success, and that it was at least very helpful for a good social life. Approximately 80 percent of Group E (combined system residential) responded in a similar manner.

Respondents were less sure of their lipreading ability than of their ability to speak. More than 80 percent of those with oral backgrounds stated that they understood most of what was said to them, compared to half from the combined system residential schools. The ability to lipread was considered at least somewhat helpful for academic success, and very helpful to social success by approximately 90 percent of Group A (oral), and 80 percent of Group E (combined system residential).

In light of the importance placed on oral communication skills, it is interesting to note that when asked what the deaf student could do to help himself academically, about 20 percent of the orally oriented group checked maintenance or improvement in lipreading and speech skills, while only about 5 percent of Group E mentioned these skills. The most frequent suggestions given by both groups involved reading more, borrowing notes, and studying more. The respondents suggested that a good social life in a hearing college might be more easily attained by living in dormitories with hearing students, having hearing friends make introductions, having contacts with hearing people before college, and learning to speak to others first.

Quigley, Jenné, and Phillips, in noting that an approximately equal percentage of the oral group attended day programs as had attended oral residential school, stated that the residential factor did not seem to determine the decision to pursue higher education in a regular institution.

> It is more likely that the determinant was the philosophy, which guides both oral residential schools and day programs, of preparing students for later education in regular high schools and colleges and of fostering as much interaction as possible with normal hearing persons during the schools [sic] years.

This philosophy apparently plays an important part in the type of occupation chosen, in the choice to marry and whether or not the spouse will have normal hearing, and also in choosing organized and informal social affiliations.

A summary of the literature concerned with a comparison of the residential school and day system indicates that no clear-cut conclusions can be made as to the superiority of either system in educating the deaf. In fact, all that is reported with consistency is that the achievement level for all deaf students is generally quite low.

A definitive statement is difficult to make, due to several factors. For example, samples may be too small, not truly representative of the total populations, or poorly matched. Also, several tests are usually available which claim to measure the same ability; however, their correlation may be low. In other cases, the investigators have measured slightly different factors which make cross-comparison of studies hazardous, to say the least. In spite of these limitations, certain tentative conclusions drawn from the four studies provide data directly relating to the comparison of residential schools with the day school or class situation.

- No significant differences have been found between children attending residential schools and day settings with regard to total achievement and measures of written language.

- Overall, there appears to be no significant difference in the psychological adjustment between residential students and day students. Male day students, however, showed more behavior problems than males attending residential schools. The problems in adjustment were attributed to factors probably arising from the home environments. Since follow-up data are not available, it is hazardous to speculate as to the comparative adjustment of graduates several years after leaving school.

- In measures of speech and speech reading, day school or day class children performed better than residential students. The reason for this, as suggested by Quigley and Frisina, may be the "oralness of environment" which encourages speech-related skills.

- Day-school students have an advantage in academic preparedness. Proportionately more day students receive academic diplomas and attempt higher education at a college for hearing students, than do residential students.

- Residential students, on the other hand, receive more vocational certificates. This is probably due to the greater availability of vocational courses in the residential school system.

Effectiveness of Educational Settings for the Blind

Recent literature on the blind population contains few investigations which follow up blind graduates and dropouts. Cook (1961), in reviewing such literature in a Master's thesis, notes that such studies were prevalent during the 1930's and 1940's but decreased by the mid-1950's. Most investigations have dealt specifically with one school or state, making it hazardous to generalize to the entire blind population. Seldom does a study compare the status of graduates from two different educational settings. However, the few studies mentioned below relate directly to questions at hand. The first encompasses the area of achievement as well as a comparison of residential school students with blind children in the local school setting. The other studies briefly indicate the relative standing of graduates on several selected variables.

A study by Lowenfeld and Abel (1967) provides data comparing 50 fourth-grade and 50 eighth-grade local day-program children with 50 fourth-grade and 50 eighth-grade residential-school children. The factors of age, I.Q., reading comprehension, and reading rate were determined for all four groups. The findings indicated no significant chronological age differences between fourth grade students in local and in residential schools. By the eighth grade, however, residential school children were significantly older (by 5.1 months) than those in local programs. No significant differences in I.Q.'s were found between the two school groups at the fourth-grade level, but day-program eighth graders showed a small but significant increase in I.Q.

In measures of reading comprehension, no significant difference existed between the local and residential groups at either grade level. On a test of reading rate, local school fourth graders did not perform any better than their counterparts in residential schools. Such a difference was found at the eighth-grade level, however, in favor of local school children and contributed toward making them more efficient readers.

In a report on education, training, and employment of the blind, Dauwalder (1964) presented information regarding graduates of three public day schools and of the Western Pennsylvania School for Blind Children (a residential school). It was noted that the day-school children tended to have slightly better vision than their residential school counterparts. A significant difference in average I.Q. was reported. The I.Q. for the public school child was 97, while 106 represented the residential school average. There appeared to be a negligible difference in school achievement between graduates of day schools and those of a residential school setting. In the type of employment recorded for each group, day school students had a greater percentage in unskilled, skilled, sales, and technical or semi-skilled jobs, while the residential school graduates were more numerous in semi-skilled, service, clerical, managerial, and professional occupations. The day school graduates earned significantly higher salaries. Further comparisons could not be made due to a lack of follow-up information from the public day schools. This situation appears to be quite common for most school systems.

A more recent study of Rawls and Rawls (1968) reports the vocational and social standing of 65 graduates of the Governor Morehead School for the Blind* (a North Carolina public residential school) and 19 public school graduates who were located through the State Commission for the Blind. The overall percentage of those who went on to higher education was high; however, a higher proportion of public school graduates were successful in completing college. All of those from public schools attended college and 89 percent graduated. Almost half of the graduates of the Governor Morehead School attended college. Of these, two-thirds attained a college degree.

Rawls and Rawls reported that occupations of residential school graduates showed a wider variety, but this was probably due to the fact that over three times as many people were of that group. Fewer residential school students

*Before drawing conclusions about the relative merits of a residential school and a public day-school setting, it should be noted that the present study has combined data for the Ashe Avenue campus, which houses white children, and the Garner Road campus, which consists primarily of Negro students.

(15 percent as compared to 73 percent for public school students), however, were employed in a professional field. An unvalidated measure of occupational adjustment, which measured job satisfaction, feeling of acceptance, and attitudes toward supervisors, fellow workers and subordinates, indicated no reliable difference between the two groups. It might be noted that many graduates learned about their jobs at places other than school or home. This was particularly true for public school students and appears to point to a lack of adequate preparation in this area.

Socially, it was noted that the public school graduates were engaged in significantly more activities than those of the residential school. A comparison of the students with college experience indicated that those receiving secondary schooling in the public schools fared significantly better in measures of vocational adjustment and social participation.

When opinion was solicited regarding what courses had been lacking, only the areas of mobility training (independent travel) and human behavior (presumably referring to knowledge about social relationships) were mentioned by students from public schools. Former residential school students indicated a lack of knowledge about living and competing with sighted persons. Many students apparently felt less of a need in the academic area, but desired more preparation in personal and social skills.

In summarizing existing needs, Rawls and Rawls indicated (particularly as it is applied to the Governor Morehead School) that the prevocational program should be expanded to include more experiences resulting in better manual abilities and more knowledge of jobs in general. They also suggested that vocational courses, which developed skills that could be more easily refined and/or readily marketed, be added to the curriculum. The traditional vocations (piano tuning, chair caning, mattress and broom making) are inadequate if graduates are to be employed outside sheltered workshops. Closely allied with vocational training is the need for adequate and realistic job counseling to keep pace with the range of choices available and attainable. With regard to social activity, the investigators recommended that the residential school students should have experience in groups with the normally sighted to foster a greater sense of security and to increase the probability of meaningful contributions as adults.

From the limited data of the preceding studies, the following conclusions can be drawn regarding education of the blind in the two school settings:

- Conflicting evidence makes it impossible to state the superiority of either group with regard to measured I.Q.; however, in general there does not appear to be a significant difference.
- By the eighth grade level, residential school students tend to be older than local public school peers.
- Reading comprehension appears to be equal for the two groups. However, reading rate, although similar in the earlier grades, is significantly higher for local public school children.
- Day school graduates earn slightly higher wages than residential school graduates.
- A relatively large number of blind graduates go on to college; however, those from a local public school setting are more likely to attend than those from a residential school.
- Socially, public school graduates tend to be more active.
- Public school graduates feel a greater need for training in independent travel and human behavior, while residential school graduates indicate a need for more preparation in living and competing with sighted persons.
- Neither the residential school nor the local public school provides a complete program in vocation guidance and training; however, the residential school appears to do the better job in meeting such needs.

The review of the literature indicates that few empirical studies have made specific comparative investigations of residential school and day class settings, and those that have been performed cannot all be considered conclusive. However, from the research available, some overall tentative conclusions can be drawn regarding education of both the deaf and the blind populations in the two school settings. First, for both the deaf and the blind, it appears that day students are academically better prepared for college entry, and proportionately more of them attend institutions of higher education. Second, graduates of the day-class system tend to have more social contacts with the nonhandicapped population than do graduates of the residential school system. This is probably due to the more frequent interactions (or exposure) of day students with seeing-hearing people. For the blind, the residential school provides a better orientation and travel-training program. On the other hand, the day program offers more opportunity to develop social skills for interacting with the seeing world. No differences were found in reading comprehension between blind students from the two settings.

Deaf students from day programs have better ability in speech and speech reading than do residential students. There appear to be no differences between the deaf students of the two school settings in language development and in psychosocial adjustment.

On the basis of the limited research findings reviewed above, it would appear that, in several respects, the school

setting attended makes little difference. In other respects the residential program is most favorable, particularly with regard to travel training. However, on balance, the data available favor the day program.

Discussion

As previously noted, the empirical research performed has treated only certain problems and question areas. Further, many of the findings appear to be inconclusive. However, some of the other factors bearing on the merits of current educational settings have been considered at length in the literature. Although not based on substantiated research data, the following paragraphs, which discuss some of the issues believed to be of significance in evaluating and selecting an educational setting, should provide a valuable supplement to the information presented thus far. It might be noted that much of the discussion relates to that presented earlier on educational needs and to the pros and cons of educational settings.

Separation From Family

The separation of a child from his family is one of the major criticisms leveled at the residential schools. In general, those favoring residential-school education argue that although family life is an important consideration, the advantages of a residential school far outweigh the disadvantage of separation from family. The proponents of residential schools also point out that the children go home during vacation and holiday periods as well as for some weekends. In actuality, many of the children go home for weekends infrequently. As stated in an article by Abernathy (1964), a past superintendent of OSD, "Children who come from long distances may not get home for weeks at a time. Parental visits may be infrequent and for only a short time on occasional Sunday afternoons. Residential schools recognize this and urge parents or even require them to take their children home at certain intervals. No residential school is a home and is no substitute for one". Two additional comments are worthy of note: (1) while there was considerable disagreement among the many people interviewed during the course of the present study, most agreed that it is preferable for a child to be with his family, and (2) when asked, some of the residential school teachers indicated that if their children had been handicapped, they would have preferred to enroll them in a day program. This type of response is not particularly surprising – parents generally prefer that their children remain at home. However, in a publication of the Bureau of Child Research at the University of Kansas (Motley, 1960), it was pointed out that former students and educators of residential schools have also been critical with regard to separating a child from his family.

> Many of those who advocate the provision of public school facilities for visually handicapped children have been drawn from among the former students of the schools for the blind and from among the educators in these institutions. Superintendent Frank H. Hall, of the Illinois School for the Blind, together with the former students of that school who were instrumental in establishing the first braille classes in Chicago, Thomas D. Cutsforth, George F. Meyer, Gabriel Farrell, and Reese Robrahn. . ., and there are many others.
>
> One of the most outspoken among educators in decrying the disadvantages of institutionalization and in advocating that ways be found for blind children to remain with their families and receive their education in their local schools was Samuel Gridley Howe, who introduced residential schools for the blind to this country with the founding of Perkins School.
>
> Berthold Lowenfeld, superintendent of the California School for the Blind, and Farrell are two among those educators who feel that segregated facilities need to be provided, but only for certain children after careful screening and then only for children who are educationally blind. (Motley, 1960)

In essence, the point is that a child should not be placed in a residential school and separated from his family if he can benefit from a day program.

In a report of a "national work session" on the education of the blind (American Foundation of the Blind, 1954), the following basic premise was set forth:

> The educational program begins with the family and it becomes a cooperative program between the home and the community as soon as the community resources and influences are brought to bear upon the total education of the child.

Although the above comments are written in the context of the blind (with regard to the issue of separation from family), they would apply equally to the deaf.

Segregation and Isolation

Another aspect of residential school education closely related to the above is the issue of segregation and isolation. This is one of the most controversial areas of the educational process for the handicapped and has been debated at length between the proponents of residential and day programs. Those favoring the residential program generally argue for its superiority based on the premise that it provides the most complete education for deaf and blind children, and that it provides an environment "entirely geared" to the needs of the handicapped (Motley, 1960). They also point out that

students are encouraged to get out into the community, that they regularly come into contact with volunteer groups at the school, and that they participate in some extra-curricular activities (particularly athletics) with nonhandicapped students. With respect to the environment, according to Motley (1960), "It is this 'entirely geared' environment which concerns the exponents of public school facilities. . ." The author goes on to quote T. D. Cutsworth who critizes residential schools for the blind for their failure to produce individuals who are capable of making the adjustment to a seeing society:

> One all-important influence that [institutions] cannot reproduce is the necessity of independent action under the critical eye of the seeing public. . . . The lack leaves the pupil at the end of his residence in the institution socially immature and sadly at sea among the seeing members of his community. (T. D. Cutsworth, quoted by Motley, 1960.)

In general, proponents of day programs recognize the advantages of the specialized educational program, teachers and facilities; however, they maintain that the disadvantages socially and psychologically outweigh these advantages. According to Motley (1960):

> George F. Meyer, who attended both residential school and public high school . . . feels that instead of receiving his schooling in an 'environment entirely to his needs' the blind child needs to develop, in his growing years, the ability to make the constant adjustment 'entirely geared' to the needs of the seeing.

With regard to education for the deaf, Babbidge, et al. (1965), in a presentation of the pros and cons of residential and day programs remarks, "the adult deaf. . .generally prefer to congregate in urban centers, but residential schools generally do not prepare students adequately for urban living". The authors add: "Many factors in residential schools operate to encourage the segregation of the deaf in our society. The children do not have opportunities to play and associate fully with hearing children or the challenge of finding ways to communicate effectively with them. . .". Babbidge, et al., also present the counter-argument that a deaf child can also be isolated in a hearing environment at home. Further, those favoring a residential program point out that by simply placing a child in an integrated setting in a regular school does not guarantee that he will be integrated. The child may be rejected by his nonhandicapped peers, or he may be socially or psychologically unequipped to interact with his classmates. Such arguments are of course true for some of the handicapped, but, by the same token, they smack of defeatism. If a child is not provided with the basis for interaction with the seeing/hearing world – which can best be accomplished through regular exposure – then the prospects for interaction are lessened. As Meyer wrote in 1929 regarding the education of blind with sighted children:

> Whether it be in the regular classroom, on the playground, on the street, in the car; whether it be at home, in some public place, or in his own backyard the blind child must make his own contacts and meet his own problems. Sometimes he is unduly favored, sometimes he is discriminated against; sometimes he is pampered, and sometimes he is wounded by unkind gibes and thrusts; but every one of these conditions good and bad, positive and negative, is characteristic and illustrative of life itself, and he sometimes learns as much from his failures as he does from his successes. (American Foundation for the Blind, 1954)

It would appear that an educational setting should prepare a child for interaction with a seeing and hearing society starting early in his educational career. The evidence available from this study indicates that the residential schools, and specifically OSD and OSSB in actuality, provide little of this exposure or preparation.

Cottage Parents

The inadequacy of cottage parents has been described as one of the weakest aspects of Ohio's residential school program. In an interview with Division of Special Education personnel, it was pointed out that, although cottage parents are selected from a civil service list, there are currently no State standards, nor are there any firm personal qualities required.* Further, salaries for cottage parents are low, and the turnover rate is high. It was also suggested that in practice the schools "more or less take what is available" – apparently due in part to the shortage of such personnel at current salaries.

Interviews at the two residential schools yielded mixed responses regarding the quality of cottage parents. However, it was found that the majority are older people, and relatively little training is provided. As suggested in one interview, cottage parents are in effect a child's substitute parents. In view of the fact that children spend a significant amount of their out-of-class time under the supervision of cottage parents, their selection and training is an important and basic consideration. At present, it appears that the cottage-parent situation is a definite but not inherent drawback of the residential schools.

Communication Methods of the Deaf

For roughly a century, there has been a continuing controversy among educators and researchers regarding the most useful method of communication for the deaf. While there are several variations in the methods used for teaching and employing communications, the two basic approaches are the "oral" and the "combined" methods. In the pure form of the oral method the child is taught via speech and

*The superintendent of one of the schools indicated that he relied strongly on interviews in hiring.

writing and is expected to communicate using speech, lip (speech) reading, writing and reading. The combined method employs various combinations of oral and manual communication, including the language of signs and finger spelling (Quigley, 1968). Although it is within neither the scope nor intent of the present study to pursue the methods controversy, it cannot be entirely ignored in view of the fact that there is a split between the residential and day programs with regard to method. Specifically, the State School for the Deaf employs the combined method, while the day programs primarily employ the oral method. (With few exceptions, residential schools around the country employ the combined method.)

The Babbidge, et al. (1965) report referred to earlier, presents a concise and lucid discussion capturing the essence of the methods controversy and the considerations that pertain. A portion of this discussion is quoted below.

> Advocates of the purely oral method of instruction concede that speech and speechreading, aided by auditory training to take advantage of even small residual hearing, may be more difficult and take longer to learn than manual methods. They maintain, however, that it prepares the deaf child for wider horizons and greater opportunities in the hearing world culturally, socially, and economically. It prepares the child to take advantage of a wider range of educational opportunities than are likely to be offered by special programs for those who can easily communicate only manually. Furthermore, they consider that it makes possible a fuller, more satisfying life. Those who favor the oral method also point out that manual communication is more easily acquired, and that a child who is taught manually is less likely to put forth the extra effort required to achieve speech and speechreading.
>
> Those who favor the employment of manual methods are less likely to be purists. In fact, in the course of hundreds of discussions by the staff, not a single person was encountered who did not agree with the desirability of oral instruction for young deaf children. The difference appears really to hinge on how readily one gives up on oral instruction. The advocates of manual methods emphasize that inevitably some children will be unable to acquire usable speech or to learn speechreading well enough to communicate effectively. They maintain that a child should not be denied the opportunity to learn a form of communication within his capabilities. They contend that it is easier to communicate subject matter in the classroom by manual methods. Some advocate the combination of oral methods with finger spelling, a combination that keeps the English language as the symbol system of instruction and communication. Others favor employing all methods – oral, finger spelling, and the language of signs – in an effort to make the learning process easier. They also maintain that it is less of a strain on the deaf person to communicate manually, and point to the fact that most deaf adults prefer to use manual communication among persons – deaf or hearing – who know it.

As indicated above, a fundamental controversy in the area of communication revolves around the issue of whether oralism should be emphasized and given preference. Many educators point out that (1) it is more natural for the deaf to communicate manually, (2) many are unable to master oral communication, and (3) in general, the deaf prefer to use the manual mode among themselves. Admittedly, these are strong and apparently valid arguments. But this position neglects a basic consideration – without the ability to communicate orally, the prospects for interaction with hearing society are substantially reduced. Thus, as maintained by the proponents of oralism, every effort should be made in the schools to provide deaf students with the basis for choice in later life. To the degree that oral communication is mastered, the deaf individual has the option of interaction with the hearing population – without it, this option is, for all practical purposes, precluded.

It should be stressed that it is not the intent here to argue the merits of the various approaches for teaching oralism, but rather to focus on the end product. That is, the methods that appear to be the most effective in teaching oral communication should be employed – including finger spelling and signing – if they enhance the instruction-learning process. Babbidge, et al. (1965), sum up the issue as follows:

> In order to encourage keeping open as wide a range of subsequent choices as possible for deaf young people, the Committee [HEW Advisory Committee on the Education of the Deaf] urges that educators of the deaf continue to place emphasis on oral methods, but that manual methods be employed in individual cases when it is clear beyond a reasonable doubt that success by oral methods is unlikely.
>
> There will continue to be failures in the oral method, and facilities for teaching in the language of signs should therefore be retained. Furthermore, many deaf adults will prefer the use of the language of signs and the company of the deaf as an easier and more relaxing social experience. They have a perfect right to make that choice, and no aura of failure or opprobium should surround it. The Committee believes, however, that the option should be kept open for deaf children to make such a choice as responsible adults. The choice should not be made for them in the schools unless it is clear after careful professional analysis on an individual basis that the choice cannot be kept open.

It is recognized that the proponents of the combined method – which is used predominately in the residential schools – are not opposed to oral instruction per se. But, as indicated above, they point out that many deaf children are unable to master the oral method; therefore, they should be taught the manual method to provide them with a mode of

communication. In general terms, this position represents the thinking and approach employed at OSD. Specifically, the stated policy of the school is to teach children the oral method until they demonstrate that they are unable to learn it. The judgment of whether a child is incapable of learning to communicate orally is made jointly by the teaching and guidance staff. On the surface this appears to be a rational policy; however, in practice a basic problem arises. This problem hinges on the lack of reinforcement of oralism – at least outside of the classroom. In effect, OSD does not provide an "oral environment" for its oral students. Once outside the classroom, oral students are exposed to, and interact with, a large percentage of their peers, teachers, and other school staff members who employ the manual method. In view of the fact that the oralism is a difficult accomplishment and manualism is acquired with relative ease, there is considerable temptation for oral students to fall back on the manual method. As aptly stated by Babbidge, et al. (1965),

> The reliance of manual methods of communication at least outside of the classroom in the majority of . . . [residential] schools tends to fix a habit of such relatively easy communication for social purposes and thus to dull the motivation to surmount the more difficult obstacles to oral communication.

When consideration is given to the fact that most deaf individuals can learn manual communication without much difficulty – even without formal training – it appears ill-advised to transfer a student to a manual communication program without having first made a concerted effort to both teach and effectively reinforce oralism.

A related facet of the deaf-communication issue concerns the dichotomous distribution of deaf students in residential and day programs. Specifically, while the majority of the students at OSD have deaf parents, almost all of the students at the Columbus day school (A. G. Bell) have hearing parents. This situation is apparently a result of parental preference; deaf parents generally insist that their deaf children be taught manual communication. While it is certainly debatable, this attitude on the part of deaf parents may have the unfortunate effect of perpetuating a cycle of segregation. As expressed previously, an individual armed with the ability to communicate only manually has severely limited prospects for any meaningful interaction with the hearing world around him.

Before concluding the discussion of communication, one other factor should be considered. One of the major criticisms directed at the day program by advocates of the residential schools is that oral instruction is over-emphasized at the expense of the academic program. However, when day and residential students are compared, research results have generally indicated that there is little difference in achievement between the two groups. Further, a greater proportion of deaf day students go on to college. (With regard to the latter, it has been suggested that the I.Q.'s of day students are higher than those of residential-school students. On the basis of data presented in Section II, this does not appear to be the case in Ohio, in that the average I.Q.'s of deaf residential and day students are similar.)

Mobility Training for the Blind

Independent travel is a primary need of the blind. But, unlike the language and communication needs of the deaf, independent travel is not a controversial area; it is generally agreed that it is a highly important skill. The ability to travel independently has basic implications for the adjustment, confidence, self-reliance, and future employability of a blind child. As stated in a recent report, "All the advantages aimed toward the successful integration of the blind in a sighted world . . . [are] nullified by an omnipresent dependence upon others to meet their mobility needs". The authors add, ". . . the need for independent travel is an educational need, requiring a well-trained specialist using a defined program of instruction which is included within the regular program of education" (Quinn and Gockman, 1967). A specialized program in orientation and mobility often includes training in body image, spatial relationships, and systematic experience with the nature and use of common objects in the environment (Mills, undated). According to Quinn, et al. (1967), demonstration projects have shown that "there were definite indications that the participating students had gained a greater degree of confidence and freedom of movement, and the foundations of an improved self-concept" as a result of such training. Further, as indicated in Section III, research has indicated a positive relationship between independent-travel ability and self-support (Haines, 1965).

On the basis of the study conducted by Quinn and Gockman (1967), a successful orientation and mobility-training program should be initiated at about the sixth grade level, with an instruction frequency of 3 days per week (30-40 minute sessions) over a duration of about 8 to 14 months, depending on the student's ability. The authors concluded that 11 to 12 months of instruction was generally adequate to meet the student's most pressing travel needs and to advance him to the point of independent travel within a typical residential community. According to Mills and Adamshick (1968), ". . . it is the consensus of qualified instructors . . .that it takes a congenitally blind student an average in excess of 200 hours of individual instruction to become a competent, efficient, safe, independent traveler".

Based on interviews and observations at OSSB, it appears that the school conducts a systematic and effective orientation and mobility program. As indicated in Section II, the program is primarily the responsibility of two professional instructors (peripatologists), supported by a trained assistant, who work with students both individually and in groups.

Orientation and travel training is frequently limited in the day program. According to the two OSSB peripatologists, there are at present only three other trained peripatologists in Ohio – two in Cincinnati and one in Cleveland. Outside of these urban areas, training often consists solely of the

to-and-from-class situation. However, the Bureau of Services for the Blind arranges to provide orientation and mobility training to students 14 years or older on a voluntary basis. In most cases students must leave their home communities to receive training. Under a program jointly sponsored by the Bureau and OSSB, day program students can attend a summer session at OSSB for "limited preparation in travel and mobility". (No estimates were available on the number or percentage of day students taking advantage of the summer program.)

On the basis of the above, it is concluded that with respect to training for independent travel, at the present time, the advantage clearly lies with the residential school.

Educational Costs

Critics of the residential-school system have pointed out that the cost of education in these schools is too high. Although educational costs are not directly related to the adequacy of a program, cost per pupil does have implications for program cost effectiveness. Thus, an examination of costs on a per-pupil basis for the residential schools, special day schools, and day classes was made. As shown in Table 4, the approximate average costs for the 1967-68 school year for the three school settings were:

OSD and OSSB	–	$3,675
A. G. Bell (Columbus & Cleveland)	–	1,810
Day Classes	–	1,528 (range $909 to $2,091)

It should be stressed that the costs – particularly for the day classes – are approximate, and that there is considerable variability (in cost) from one program to another. However, the cost data are believed to be adequate for relative-comparison purposes. It should also be noted that these figures represent operational expenditures and they do not include capital costs.

The above figures reveal that the cost per pupil in the residential schools is about twice that for the special day schools (A. G. Bell schools) and more than twice that for the day-class program. To a large extent the higher cost associated with the residential schools is a result of the expenditure for care and subsistence, which averaged $1,233 (per pupil) for the two schools. However, when the latter figure is subtracted from the total cost ($3,675 - $1,233), an average cost of $2,442 per pupil remains. This figure is still substantially greater than that for the day programs.

To obtain information relating the cost of residential school education in Ohio with that nationally, the cost per pupil at OSD of $3,810 (Table 4) was compared with that for all other state residential schools in the U. S. (The figures for other states are based on October 1967 cost data.) This comparison indicated that the cost per pupil at OSD was among the highest in the nation. In fact, only five state-supported residential schools for the deaf had a higher per pupil cost. (The five states are: California, Illinois, New York, Rhode Island, and Virginia.) Across all public residential schools for the deaf in the U. S. (including those with private financial support) the average cost per pupil for 67 schools was $2,911.* While national figures were not available for the residential schools for the blind, it would seem reasonable to assume that they would be generally proportional to the figures presented above.

A Summation – Residential Versus Day Program Effectiveness

From the information and discussion presented above, some basic factors emerge. It is clear that both residential schools and the day class program meet some of the needs of their students, but neither setting meets all of their needs. The residential programs at OSD and OSSB provide specialized programs, administrators, teachers, facilities, equipment, and services. In addition, these schools offer a comprehensive, well-graded academic and prevocational program specifically tailored to the characteristics of the deaf and the blind. In addition, the residential schools provide their students with specialized training directed toward major aspects of their respective handicaps, e.g., a mode of communication for the deaf, and independent travel for the blind. Only in isolated cases can the day program in Ohio boast of such apparent advantages. However, as indicated above, in properly assessing the residential school system, its effectiveness – particularly in terms of the student end product – must be considered. And, in order to answer the question of whether the State should retain and operate the two schools, the alternatives must also be considered.

With regard to the deaf, a review of the literature indicated that on an overall basis there was little difference between residential and day students on such factors as language, achievement, and psychological adjustment, although one study did show male day students exhibited more behavioral problems. Differences between the two groups – favoring the day students – were found on such factors as speech and speech reading, academic preparedness, and percentage receiving academic degrees. With regard to the blind, comprehension was found to be about equal for the two groups, but reading rate was found to be faster for the day students. In addition, the research literature indicated that day students are more likely to attend college than those from residential schools. Further, day school graduates earn more and are more active socially than residential students.

*See the Financial Statement in the "Directory of Services for the Deaf in the United States" (pp. 752-754) for cost per pupil figures for each state residential school in the U. S. (Doctor and Benson, ed., 1968).

Thus, based on the factors considered and the limited research data available, it would appear that on an overall basis – with the probable exception of travel training – the day program generally produces a better prepared end product. This appears to be the case in spite of the specialized characteristics of the residential schools and the similar I.Q. scores of Ohio's residential and day students. It has been argued that the residential schools have a population of students that are handicapped to a greater degree – both academically and physically – than those in the day program. No evidence to support this contention was found during the course of the present study. In 1964 the former superintendent of OSD stated:

> Frequently there has been a tendency in day classes to dump slow-learners on the residential school. Today this problem in Ohio has been resolved to the extent that most day systems accept children in their territory as they come . . . So far as I can ascertain we have about the same distribution in day and residential schools, at least in the elementary area. (Abernathy, 1964)

It could also be argued that many of the findings reported above were not based on research conducted specifically on Ohio's residential and day programs. However, the interviews with nationally recognized experts and the visits to schools outside of Ohio indicated that, in general, Ohio's residential and day programs are not unlike those in other states.

It might be pointed out that even if there were no relevant differences found between residential and day students, other negative factors operate at the residential schools. As discussed above, students at the two residential schools are separated from their families during much of the school year, to a large extent they are isolated from the "main-stream" of society, and, in general, the cottage parents are not adequately selected or trained. Of related interest is the national trend in education of the deaf and blind; specifically, the proportion of hearing and visually handicapped being educated in a day setting is increasing. As noted in a recent report on the education of the deaf, "The number of day class programs for the deaf in this country has more than doubled in the past 15 years". (Babbidge, et al. 1965). With regard to the visually handicapped, Kirk (1962) states, "the proportion of blind children now being educated with the sighted in public schools is constantly increasing". Similar statements are made by Motley (1960) and Jones (1969), who add that more blind children are now being educated in the day programs than in residential schools.* Prior to 1959 the reverse was true.

*Information regarding how each state provides education for its deaf students – including the number of students in each type of program – is contained in Doctor and Benson, ed., 1968. To a lesser extent similar information for blind students is found in the Directory of Agencies Serving Blind Persons in the United States (American Foundation for the Blind, Inc., 1967).

On the basis of the foregoing factors and considerations, it is concluded that, on an overall basis, the educational needs of the deaf and blind can best be served in a day program. It is recognized, of course, that educational placement of the handicapped should be based on individual assessment and that there will always be a segment of the deaf and blind population that cannot benefit from a day program. For the latter reason it is concluded that residential schools should be retained. However, as shown in Tables 1 and 2, approximately 60 percent* of the most recent student body at OSD and OSSB were enrolled at these schools due primarily to the fact there was no local program for them to attend. Effort should be directed toward developing and implementing a plan for working toward the elimination of placement in a residential school because there is no acceptable alternative. It might be pointed out that such placement does not appear to be consistent with the Ohio Laws for Special Education which state that the basis for admission of the hearing and visually handicapped to OSD and OSSB, respectively, is the judgment that ". . . due to such handicap, [the child] cannot be educated in the public school system . . ." (Gibbons, 1968). (The complete regulation is quoted in Section II of this report.)

It has been argued that one of the major justifications for the residential schools is the weakness of the day program. An examination of the day program during the course of the present study revealed that serious shortcomings exist and that in many instances the criticisms leveled at the day program are justified. Thus, in order for the day program to become a viable alternative to the residential schools, significant improvements must be made. In an article presenting the merits of the day program for the blind, G. F. Meyer observed:

> . . . In stressing the advantages of the day school plan, I have not lost sight of some of its weaknesses. Its essential weakness, however, lies not in its inherent inability to perform those services for certain of our blind people which are now left undone in all or most of our systems, but rather in the lack of aggressive leadership and the machinery and the technique for doing these things. Most of our public school systems do not offer to their blind children intensive and individualized corrective gymnastics, and widely differentiated courses in music and dramatics, such as are made a part of the regular instruction in the best of our residential schools. However, there seems no good and logical reason why a place for these important educational elements cannot be found in a carefully planned course of day school instruction. (American Foundation for the Blind, 1954)

As an outgrowth of the findings and discussion presented above, the following section of this report presents recommendations regarding the residential schools, possible alternatives for consideration, and identifies and discusses needed improvements and changes in both residential and day programs.

*Averaged across the two schools.

V. RECOMMENDATIONS, POSSIBLE ALTERNATIVES, AND NEEDED IMPROVEMENTS IN EDUCATING THE DEAF AND THE BLIND

Recommendations for the Residential Schools

As an outgrowth of the research effort and the conclusions presented in the previous section, the major recommendations regarding the two residential schools are presented below:

(1) The two State residential schools should be retained to serve the needs of such students as:

- Those who are unable to benefit from a day program,
- The multiple handicapped – including the slow learner,
- Those with unsuitable home environments.

(2) Efforts should be directed toward eliminating placement in the residential schools on the basis of lack of a local program.

As previously indicated, it is recognized that there will always be a segment of the deaf and blind population that cannot benefit from a day program. This includes many of the multiple handicapped, and particularly the slow learner. In addition, there are those with unsatisfactory home environments. For example, in addition to the problems of poverty and broken homes, there are parents who reject their deaf or blind child or are embarrassed at having given birth to a handicapped child. In instances of this type, it is probably better to admit these children to a residential school. Thus, individual evaluation and placement of students by the staff clinic team should definitely be continued. However, based on evaluation, those students who can benefit should be placed in a day program.

It is recognized that with the exception of the A. G. Bell Schools and the clusters of graded classes around urban centers, in many respects the day programs are weak in terms of the curriculum, services, and facilities offered. Furthermore, there are at the present time, no viable alternatives for students in residential schools with no local program. The latter situation is particularly acute in rural areas that are sparsely populated. Due to the low incidence of hearing and visual handicaps, the establishment of adequate programs and supportive services is financially prohibitive. Thus, in order to implement the second recommendation, feasible alternatives must be provided. The plans outlined below are offered for consideration as alternatives (or supplements) to the present day-program structure.

Because it was not within the scope of this study to develop detailed alternative plans, the latter are discussed briefly and in general terms. Any comprehensive plan for the entire State will necessitate an in-depth study of all reasonable alternatives to best serve the needs of the school-age deaf and blind throughout Ohio.

Possible Alternatives to the Existing Day Program Structure

In a position paper *Special Education and School District Organization*, Bonham (1968) states:

> The development of programs and services for handicapped children in Ohio faces a serious crisis in the decade ahead. This crisis takes on different shapes in different areas of the state.

Bonham then briefly describes the problems of special education in the metropolitan, suburban, and rural areas of Ohio:

> . . . the traditional approach in which the major city provides program and service is in eminent [sic] danger of collapse . . .
>
> . . . the autonomous and uncoordinated approach to program development in the suburbs is expensive and inefficient, resulting in much duplication of staffing and effort . . .
>
> . . . with sparse populations – the incidence of handicapped prohibits the development of programs and services unless of the approach is based on a multi-county region . . .

With this background, the alternative plans are presented below.

State-Supported Regional Special-Education Centers

This first alternative which would make day programs available for more hearing and visually handicapped students is for the establishment of state-supported, regional special-education centers in well-selected locations throughout Ohio. These centers would be located near existing regular public school facilities to encourage classroom integration (where desirable), and social interaction among students. The center would be located within reasonable daily travel distance of the homes of as many students as possible. Those students who could not be expected to go home daily due to distance, would be boarded in area homes with the stipulation that they return to the parental home for weekends. Serving children from preschool through the secondary school level, the regional plan would provide for special diagnostic and training services in an economically feasible manner. The

administration of the centers could be handled through a Regional Education Service Center (Drozda, Byers, and Virgin, 1969)*, and several could be located within one Service Center. A plan similar to this has been developed by Illinois (Illinois Commission on Children, 1968) and will be utilized by that state in educating its hearing impaired population.

In developing regional centers, the State should consider consultation with adjoining states to ascertain the incidence of deafness and blindness in areas contiguous with Ohio, and cooperate with them in a joint effort if such action is desirable and necessary.

Statewide Adoption of Special-Education Districts

A second alternative for making day programs more available to hearing and visually handicapped students is the establishment of special education districts throughout the State. The plan is provided for and encouraged by Ohio law,** and it is already being used by some districts in Ohio. Operationally, the special-education district is similar to the regional special-education center. However, rather than being state organized and supported, it is formed by the voluntary banding together of local school districts for the purpose of forming clusters of well-graded classes in one location for the handicapped children of all member districts. Districts that organize in this manner could cover a portion of one county, an entire county, or areas in two or more adjoining counties. Arrangements for administration, whether by one local board of education or by a specially created board, should probably be in contract form, as should details regarding financing and acquisition of facilities and personnel. Member districts support the program on a fixed, ratio, or tuition basis. To enhance prospects for program success, it would be desirable for each local district within the State to become part of a special education district.

In summary, both plans proposed here would provide for groups of classes located in facilities attached or adjacent to an existing public school. These classes would be provided with the necessary teaching and supportive personnel as well as special equipment and materials. Those children living within reasonable traveling distance of the school would be expected to go home each night. Those living too far away to allow daily travel would be boarded with selected families, but would return home two to three nights each week.

These plans potentially offer advantages to both rural and urban areas in that education could be provided to handicapped children who otherwise would have to attend the residential schools.

Potential Constraints

Clearly, a number of potentially constraining factors must be considered in determining the feasibility of the alternative plans presented above. One such factor relates to the question of whether a sufficient number of boarding homes could be found for deaf and blind students. It is suggested that a more realistic compensation level than that presently permitted ($72 per month on average)* could increase prospects for finding satisfactory boarding homes. It might be pointed out that annual room and board expenditures at the two residential schools average over $1,200 – or about $100 a month – per student. With capital costs added to these amounts, the cost-per-student figures would be even greater. Thus, it would appear that a significant increase in boarding-home payments could be made that would be well within actual care and subsistence costs at the residential schools.

It is recognized that even with plans of the type proposed above in operation, it may not be possible to provide a satisfactory day class for every "qualified" deaf or blind child in the State. However, it would appear reasonable to expect that such plans would be able to meet the needs of the majority of students capable of benefiting from a day program.

It is also recognized that the objective of eliminating placement in the residential schools based primarily on the lack of a local program, cannot be achieved over the short term. However, it is strongly recommended that efforts be directed toward meeting this objective to the extent possible over the next 5- to 10-year period. The possible need for new permissive legislative action and the probable need for additional funds to finance an alternative plan(s) may pose potential constraints.

As previously noted, the development of a comprehensive and coordinated State plan for educating hearing and visually handicapped children requires a more detailed study of alternatives than that possible within the scope of the present study.

Recommendations for Organizational and Administrative Consolidation

It has not been ascertained in this study why the educational needs of the deaf and blind in Ohio continue to be administered by two separate bodies – one for the

*The Drozda, Byers, and Virgin (1969) report is one of a series entitled, "Planning to Meet Educational Needs in Ohio Schools", prepared by Battelle Memorial Institute for the Ohio Department of Education.

**Gibbons, 1968.

*This monthly average is based on the standard payment of $15 per five-day week and $18 per seven-day week (Bowers and Bonham, 1966).

residential schools and one for the day programs. Certainly the needs of the students in the two educational settings (day and residential) are similar. In fact, the educational needs of deaf and blind students could perhaps be served best by exposure to aspects of both programs (see discussion below). It is recognized that day programs provide a desirable oral environment for reinforcing speech and lip reading while residential schools maintain a wider range of vocational programs as well as many specialized services (e.g., independent travel training) deemed important to the education of the hearing and the visually handicapped. The coordination of student exposure to these environments and special services in a manner which meets the individual needs of the student is a responsibility that can be implemented most effectively by specialists operating within a unified administrative body. Further, it is likely that unified administration would encourage even greater communication and cooperation between residential and day program staff.

Thus, it is recommended that the present dual structure be consolidated under a single organizational unit – such that administration of all public education of the deaf and blind can be unified. It would appear that the logical organizational unit would be the Division of Special Education.

Needed Improvements and Changes in the Residential Schools

While it is recommended that operation of the residential schools in Ohio be continued, it is suggested that a number of improvements and changes be given active consideration. The words "improvements and changes" were deliberately chosen to imply that there are facets of the residential school program which are weak and should be improved to carry out the educational goals as they are presently defined. Other changes could be implemented to augment the present service capabilities of the schools and thereby increase their value to the general community and to the population of deaf and blind children in particular. The following is a list of needed improvements and changes for Ohio's residential-school operation:

- Developing an improved system for the selection and training of cottage parents
- Updating the vocational education program
- Providing campus jobs for students
- Developing a research center
- Increasing reinforcement for oral communication.

Each of the above items is briefly discussed in subsequent paragraphs.

Developing an Improved System for the Selection and Training of Cottage Parents

Education within a residential school requires that highly qualified and dedicated teachers provide for the educational needs of the children and that carefully selected and well-trained personnel provide them with appropriate care and supervision after school hours. Although the two State residential schools attempt to employ individuals who are judged to be suitable for their responsibilities as cottage parents, inadequacies in the selection process, salary schedules, training, and work schedules contribute to a program that is deemed to be generally weak. It is recommended that the administration of the two State residential schools and that of the Ohio Department of Education jointly give serious consideration to implementing the following changes:

(1) Develop systematic selection criteria for cottage parents based on the skills and knowledge that the job entails. A competitive test should be considered for inclusion in the selection scheme.

(2) Provide a higher salary schedule as a means for increasing the likelihood of attracting individuals with the desired mixture of intelligence, understanding, and dedication.*

(3) Prior to job entry, provide a short, intensive course including basic subject matter on child development, child counseling, adolescent behavior, and other similar information. This should be followed by an on-the-job continuing education program on a regular basis.

(4) Develop a work schedule based on the "shift" structure which would allow one shift of cottage parents to return home in the late evening hours, to be replaced by a smaller shift of night personnel. This approach, which is currently being utilized in a number of residential schools outside of Ohio (including Illinois and California), has the following advantages:

- Selection can be made from a greater number of applicants who are attracted to the position because of the shortened working schedule and the opportunity to return home each day.
- Applicants can be attracted which are closer to the age of the students' parents and, unlike the current older cottage parent, are generally more cognizant and sympathetic toward contemporary student problems and behavior.

*The small salary increases (of up to 12 cents per hour) awarded cottage parents effective for the 1969-70 school year are not considered sufficient to attract the desired personnel.

Updating the Vocational-Education Program

During the years prior to the existence of educational programs and vocational training facilities for the deaf and the blind, job opportunities were limited to a few low paying tasks requiring little skill and intelligence. As education systems developed, the deaf and blind progressed – through their own motivation and the training provided primarily in residential schools – to jobs which were more challenging and paid higher wages. But today, many residential schools including OSD and OSSB offer vocational training in a number of areas which are receiving little emphasis in the job market or have not been updated to keep pace with changing technology. For example, while OSD provides a broad range of vocational courses, the emphasis is primarily on the printing trades, which are increasingly becoming more automated. At OSSB, the emphasis in vocational training is on music and piano tuning. Although the areas emphasized have traditionally provided good employment, they nonetheless tend to channel students' vocational interests away from other areas (e.g., computer services and automobile services) in which they might be equally successful. Relatedly, it appears that students are not sufficiently informed and encouraged with respect to other vocational areas.

Thus, it is recommended that each residential school conduct a systematic study of present and future market demands, possibly through consultation with an organization which specializes in this service. The output of this study would be the identification of those vocational areas which require skills that are not incompatible with the handicaps of deafness and blindness. It is further suggested that on the basis of the study findings, each residential school make the changes and adjustments where necessary to both modernize the vocational curriculum and, if warranted, to introduce new vocational areas.

Providing Campus Jobs for All Students

The previous item suggested that the residential schools consider an effort to update their vocational programs to keep pace with changing technology. However, it is recognized by personnel involved in the training of deaf and blind students, that an effective vocational training program must be supplemented by instruction on the responsibilities which holding a job requires. These responsibilities include:

- Dependability; showing up on time every working day unless excused for a legitimate reason
- A complete understanding of one's tasks and an awareness of deadlines to complete tasks
- Knowledge of employer's policies regarding dress, talking with fellow workers on the job, and general conduct on the job
- Knowledge of safety rules and special procedures with which the handicapped person should comply.

To provide students with practical experience in meeting the above job related responsibilities, it is recommended that both residential schools initially provide – during the secondary school years – part-time campus jobs for all students, including those going on to college. (A program of this type is in operation at the residential school for the blind in Jacksonville, Illinois.) The jobs need not involve those tasks for which the student is being prepared in his vocational training classes, but could be one of the many tasks that must be performed on campus (e.g., jobs in the cafeteria, in the recreational area, on the school grounds, etc.). The jobs should, however, entail supervised work experience on a specific job assignment, should be regularly scheduled and paid at an hourly rate, and should require responsible behavior from the student. To the extent possible, during the last 1 or 2 years of the high school program, the campus jobs should be followed by part-time jobs in the community. The objective here is two-fold: to provide more realistic employer-employee experiences, and to provide the opportunity for meaningful interaction with the nonhandicapped. (While OSD offers a work-study program along these lines, the present program is limited to those students who are not strong academically and includes only 16 students.)

Developing a Research Center

Research in the education of the hearing and visually handicapped is urgently needed not only for evaluation and educational planning purposes, but also for developing the technology required for accurate clinical diagnosis as well as for bridging the communication gap with the seeing and hearing worlds. Thus, the establishment of a research center on the grounds of the residential schools is suggested. The two residential schools have the ample space and the populations of students needed for such research. The proximity of the two schools to Ohio State University and other colleges and universities in the area would make available a ready resource of specialists in education, engineering, electronics, chemotherapy, and other areas, to assist in the planning, implementation, and conduct of the research. These resources, if cooperatively employed, could provide Ohio with an excellent opportunity to develop a research center for providing much needed information to advance the educational process of the deaf and blind.

Increasing Reinforcement for Oral Communication

Instruction in oral communication is generally provided for the students at OSD as the first method of choice. If it becomes apparent that the student is not making sufficient progress in speech and lipreading, the manual method is employed to allow a more effective exchange of information

between student and teacher. It should be realized, however, that the oral method has a higher probability of success to the extent that it is effectively reinforced by the environment. Under present circumstances, students at OSD receive much reinforcement for the manual method because their communication is primarily with one another throughout much of the school day as well as during the evening hours. On the other hand, the oral method receives little reinforcement outside of the classroom. If deaf children are to make use of whatever capacity they have to talk and lipread with the hearing world, they must be placed in a surrounding which reinforces their efforts to communicate in this manner. Separate facilities (for "oral" and "manual" students) for classroom instruction, housing, and possibly recreation, would improve the environment for oralism.* More importantly it is suggested that OSD consider involving their deaf students in activities with hearing children more frequently for the express purpose of encouraging utilization of oral communication.

Needed Improvements and Changes in the Day Class Program

The concept of the well-planned day program boasts a number of decided advantages over the residential school approach. It is apparent, however, that not all local school districts with units for deaf and/or blind children have been, or are able to, provide certain required or desired services. Few can claim that no improvements are needed in the local day programs. In view of the present situation, the following improvements and/or changes are suggested for serious consideration:

- An orientation course for regular teachers of integrated classes
- Greater participation of deaf and blind students in all vocational, laboratory, and physical education classes
- Provision of counseling and vocation guidance services for deaf and blind students.

Orientation Courses for Regular Teachers of Integrated Classes

In some schools the regular classroom teacher is consulted before a deaf or blind child enters the class. In other cases, she has no choice. In either situation, however, little formal training or guidance is given which would sufficiently aid the teacher in providing the most effective learning experience for the handicapped child. It is therefore suggested that any school which purports to educate deaf or blind children in the same classroom as hearing students, seriously consider the following improvements:

- Discuss with the regular teacher whether he or she would be willing to accept responsibility for instructing a handicapped student. During this session, the teachers should be informed as to the amount and type of special procedures needed, as well as the benefits which can result from the experience.
- Develop a set of procedures for regular classroom teachers that relate to the special needs of the blind or deaf student. The procedures should emphasize detailed, specific examples in each subject area (science, mathematics, vocational courses) and should be stated in behavioral terms.
- Make the services of a special-education teacher and/or persons with actual experience with deaf or blind handicapped children readily available for conferences and discussions with the regular classroom teacher.

Greater Participation of Deaf and Blind Students in Vocational, Laboratory, and Physical-Education Classes

Blind and deaf students in the local day programs are often excluded from courses such as shop, home economics, chemistry, and physical education, because usually the teaching staff is concerned with the safety of handicapped students. In view of the importance of these areas, local day programs should work toward making these courses as available to the blind and deaf students as they are to the regular student body. Likewise, the hearing and visually handicapped should be encouraged to take part in sports and extracurricular activities in which they have ability and interest. The development of an orientation course for all teachers who deal with these students in and out of the classroom will be helpful in accomplishing this goal. Such a course should be designed to present the capabilities and limitations of the blind and deaf students and to offer suggestions and examples of special teaching procedures particularly with regard to safety.

Provision of Counseling and Vocational Guidance Services for Deaf and Blind Students

Local day programs, as a rule, are not staffed with counselors who deal primarily with deaf or blind students. In most cases, the counselor deals mainly with the regular student body but is available to serve the hearing and visually handicapped as well. The unique vocational and social needs of the deaf and blind, however, require knowledge that counselors often do not possess. Therefore,

*Careful scheduling might be the only practical solution to separation in some instances, e.g., recreational activities.

local day programs should encourage counselors who have no special knowledge regarding the deaf and blind to utilize Vocational Rehabilitation services, summer training courses, institutes, workshops, and the expertise of personnel cognizant with the problems and characteristics of the deaf and blind (e.g., trained psychologists) to acquire relevant information and experience.

Relatedly, day programs should consider the use of the Social Hygiene Guides which are used at the Illinois School for the Deaf (Withrow, et al., 1966). This excellent and comprehensive guide, which was the result of a U. S. Office of Education project, presents information in dating, courtship, marriage, employment, and financial matters. The units dealing with each topic might be incorporated into the existing school curriculum.

Needed Changes and Improvements Requiring Combined Efforts of Residential and Day Programs

In general, the preceding improvements and changes can be made in the residential schools and day programs independently of one another. However, there are other areas in which both might cooperate to increase their efficiency and effectiveness, for the ultimate benefit of all deaf and blind students throughout Ohio. The following items are presented for consideration by both systems:

- Expansion of the OSD preschool program and development of an OSSB based program
- Exposure of day-class deaf and blind children to the specialized services and programs at the residential schools
- The development of an instructional media center at the residential schools with service and training facilities for all special-education programs throughout the State
- Increased exchange of information between residential and day program staff
- Sensitization of the general public to the characteristics and capabilities of the deaf and the blind.

Expansion of the OSD Preschool Program and Development of an OSSB Based Program

The Ohio School for the Deaf is currently offering a recently developed, federally funded preschool program to be conducted at the school on an outpatient basis. Such a program is urgently needed in Ohio. The value of preschool education for handicapped children is mentioned repeatedly in the literature and was emphasized by all the experts who were interviewed on this subject. Currently, some systematic preschool training is available, but mainly in larger urban areas. Schools sometimes rely on information passed on by social agencies and, thus, do not seek out parents of preschool hearing and visually handicapped children for purposes of guiding them with regard to raising their handicapped child or advising them of the educational options available. Particularly, parents of deaf children should be contacted and provided with some counseling as soon as the impairment is determined. The program can be effective only to the extent that there is frequent contact between the preschool specialist and both the child and parent.

This frequency of contact places a particular burden on those families with preschool handicapped children who live at considerable distances from Columbus. Frequent travel poses a serious constraint. Some may not be able to afford the time or expense, while others may consider the trip too great an inconvenience. It is recommended, therefore, that the Ohio School for the Deaf consider expandings its preschool program through the use of trained field workers, possibly supplemented with correspondence materials, to reach families who live in the peripheral sections of the State.

It is further recommended that OSSB seek financial support to develop and maintain a similar program for blind preschoolers. Although the program content would be different, the organizational efforts to reach the public and to inform them of this service, as well as the use of field workers could be patterned after that developed for the OSD program. It is suggested that, whenever possible, joint efforts by the schools be made in order to minimize the financial costs of each program. Such areas as public relations and the provision of facilities for conducting local preschool programs could be handled jointly.

To assure that both preschool training for the child and counseling for the parent be fully utilized throughout the State, day program directors should consider the following steps:

- Establishing working relations with local health authorities and social agencies for purposes of locating families with deaf and blind children
- Contacting parents of handicapped children, as soon as the handicap is reported, to acquaint them with the opportunities that are available to educate their child
- Coordinating local efforts with those of OSD and OSSB to assure the practical availability of preschool programs for parent and child on a regular basis.

Exposure of Day Class Deaf and Blind Children to the Specialized Services and Programs at the Residential Schools

The residential schools in Ohio provide their students with services and programs that are not available to deaf and blind students in the day programs. For example, both OSD and OSSB offer stronger vocational programs than those presently available in most special day programs. Students in the day programs should have access to the equipment and associated facilities available at the residential schools for vocational-training programs. For the blind, OSSB provides a summer program for limited preparation in travel and mobility which is attended by a small percentage of the day students. Efforts should be made to enroll more of the students in this program. For the deaf, OSD employs many instructors who are proficient in teaching academic and vocational subjects by means of manual communication. To the extent that it is needed, day-class students who are not responding adequately to the oral method of instruction, but who must remain in the local program, should receive additional instruction at the residential school by means of manual communication in areas where they are deficient. The residential schools might also provide a summer "college preparation" program for those recently graduated, day-class students who plan to attend regular colleges. Attendance at this program could provide many of these students with the first experience of being away from home and also provide them with orientation to college life. Additional information on the basic skills of college notetaking, study habits, taking examinations, and so on, might also be furnished.

Attendance at such special programs could perhaps be accomplished by systematic "rotation" of day students through the programs for one or two semesters or during the summer, depending on the student's needs and/or the subject area involved.

The Development of an Instructional-Media Center at the Residential Schools with Service and Training Facilities for All Special Education Programs

The Ohio State School for the Blind provides a valuable service to its students, and to special education units for the visually handicapped throughout Ohio, by loaning them Brailled academic materials prepared by specialists at the school's Central Registry service. A similar service is needed in the education of the deaf. The Ohio School for the Deaf has the desired location and facilities to develop an instructional-media center in which visual and auditory aids could be produced and stored along with captioned films and other media. It is suggested that such materials be developed for both internal use and for loan to special-education units throughout the State. The school might also provide a summer training program in the utilization of instructional media including the operation of audiovisual equipment. The Illinois School for the Deaf developed a plan in 1965 for an instructional-media center which has been operated with much success. It is recommended that the Ohio School for the Deaf serve a similar function in Ohio and that it begin by determining the program needs and funds for the following:

- Specially trained staff such as a graphic artist and an audiovisual technician
- Production facilities
- Prepared audio and visual aids
- Storage facilities for aids
- Purchase of special equipment.

Consideration should be given to patterning the instructional media center after that developed at the Illinois School for the Deaf.

Increased Exchange of Information Between Residential and Day Program Staff

Although there is some cognizance of both the residential schools and day programs at the administrative level, there appears to be less between the teaching and supportive personnel of the two settings. (This is particularly true for educators of the deaf.) For the benefit of the entire school-age deaf and blind population, the personnel from each school setting should take advantage of every opportunity to become acquainted with the personnel, facilities, materials, services, and curriculum of the other system. Through work conferences sponsored by the Division of Special Education (see Jones, Ed., 1966 and 1967), mutual problems ranging from individual learning difficulties to the teaching of special skills should continue to be put forth and discussed. Likewise, ways of utilizing both school settings to the advantage of the students should be jointly considered. Through a combined effort to solve the problems related to deafness and blindness, educators, and ultimately the students, will benefit.

Sensitization of the General Public to the Characteristics and Capabilities of the Deaf and Blind

It is suggested that administrators and teaching personnel of both the residential schools and the local day programs should make a concerted effort to educate non-handicapped students and the general public regarding the characteristics and capabilities of the deaf and blind. Educators should utilize opportunities to discuss the subject in the classroom and before educational, religious, and community organizations. Brief descriptive brochures of the day programs and the residential school should be generally available to present the causes as well as the consequences,

both social and educational, of the respective handicaps. A point to be emphasized, however, is that each person, regardless of his handicap, should be judged on an individual basis, rather than in accordance with existing stereotypes. In addition, it should be stressed that both the deaf and the blind are more like than unlike the nonhandicapped.

The research team did not thoroughly evaluate the implications of the improvements and changes proposed above, as the scope of the present study did not permit such evaluation. In view of this constraint, it is recommended that the proposed improvements and changes be subjected to further study before any implementation is initiated. Efforts should be directed toward implementing those improvements and changes that are found to be both feasible and of value over the next 5- or 10-year period.

VI. SUMMARY

The study was directed toward evaluating the effectiveness of the two existing State residential schools: the Ohio School for the Deaf and the Ohio State School for the Blind. The primary objective was to answer the question: Should the State retain and operate the residential schools?

The underlying purpose of the research was to provide the basis for arriving at an improved system and a State plan for satisfying the educational needs of deaf and blind children in Ohio during the 1970-1980 period. To this end, study emphasis was placed on the administrative and organizational aspects of the educational system, rather than on such factors as curriculum and teaching methods. Evaluation of the two residential schools included an assessment of the degree to which they meet the needs of deaf and blind students, their organization and administration, and their efficiency of operation.

The approach employed in conducting the study involved (1) a detailed review of the literature, State Standards and procedures, (2) interviews with Division of Special Education personnel, (3) a number of visits to the two residential schools for purposes of interviewing staff and for making observations of operations, facilities, special equipment, etc., (4) visits to selected Ohio day programs, (5) visits to selected out-of-state residential and day programs, and (6) consultation with nationally recognized experts in the field.

A detailed description of the present Ohio educational system for the deaf and blind is presented. The presentation includes a description of the administration and organization of the system, as well as the student evaluation and placement procedures for the residential and day class programs. In addition, each of the two residential schools is described in terms of their general facilities, enrollment, educational objectives, curriculum, special services and programs, staff, budget, and per-pupil costs. The day programs, including the two special day schools for the deaf (the A. G. Bell schools in Columbus and Cleveland) and the day classes for the hearing and visually handicapped in regular public schools are described.

The educational needs of the deaf and the blind – beyond those of the nonhandicapped student – are identified and discussed. Briefly, both the deaf and the blind student require the talents of specialized teaching personnel, supportive personnel, and the use of audiovisual aids and specially adapted materials. Further, because of the limitations of their handicap and less exposure to the details of employment, both groups need guidance in selecting, preparing for, and obtaining satisfying jobs. Also, both require special instruction and "real world" exposure to develop skills desirable for satisfactory social relationships with nonhandicapped as well as other handicapped persons.

In addition to the above mentioned needs, blind students find the need for mobility and travel to be of primary importance in acting independently of another's constant assistance. An adequate physical-education program is needed to provide a means of maintaining physical health while eliminating certain characteristics often found in the blind population. Further, the acquisition of good study habits and skills in utilizing study aids enables the student to make the best use of the time available to him.

Unlike blindness which reduces one's contact with "things" in the physical environment, deafness decreases contact with people. Besides the needs summarized above, the deaf child requires an opportunity to develop language and communication skills from the earliest possible time. An early understanding and cooperation of parents with regard to raising and communicating with their deaf children are paramount in accomplishing this.

While this report discusses only those educational needs of the deaf and blind that are beyond those of the nonhandicapped student, it should be stressed that the intent is not to emphasize differences. In fact, as stated earlier, both regular students and the public should be sensitized to the idea that the deaf and the blind are more like than unlike the nonhandicapped. Such awareness potentially enhances prospects for greater receptiveness of the handicapped in later life, particularly in connection with employment.

A systematic assessment of the residential and day-class programs indicated that these settings meet some of the needs of their students, but neither setting meets all of their needs. As indicated in the report, the residential programs at OSD and OSSB provide specialized programs, administrators, teachers, facilities, equipment, and services. In addition, these schools offer a comprehensive, well-graded academic and prevocational program specifically tailored to the characteristics of the deaf and the blind. In addition, the residential schools provide their students with specialized training directed toward major aspects of their respective handicaps, i.e., a mode of communication for the deaf, and independent travel for the blind. Only in isolated cases can the day program in Ohio boast of such apparent advantages. However, as pointed out in Section IV, in order to properly assess the residential school system, its effectiveness – particularly in terms of the student end product – must be considered. And, in order tc answer the question of whether the State should retain and operate the two schools, the alternatives must also be considered.

In the case of the deaf, a review of the literature indicated that on an overall basis there was little difference between residential and day students on such factors as language, achievement, and psychological adjustment,

although one study did show male day students exhibited more behavioral problems. Differences between the two groups – favoring the day students – were found on such factors as speech and speech reading, academic degrees. With regard to the blind, comprehension was found to be about equal for the two groups, but reading rate was found to be higher for the day students. The research literature indicated that day students are more likely to attend college than those from residential schools. Further, day school graduates earn slightly more and are more active socially than residential students.

As stated in the report, on the basis of the factors considered and the limited research data available, it would appear that overall – with the probable exception of travel training – the day program generally produces a better prepared end product. This appears to be the case in spite of the specialized characteristics of the residential schools and the apparent similarity of deaf and blind student populations in Ohio's residential and day programs.

Further, as was also pointed out, even if there were no relevant differences found between residential and day students, other negative factors operate at the residential schools. As discussed in Section IV, students at the two residential schools are separated from their families during much of the school year, to a large extent they are isolated from the "main-stream" of society, and they are generally supervised by cottage parents who are inadequately trained. Of related interest is the national trend in education of the deaf and blind; specifically, the proportion of hearing and visually handicapped being educated in a day setting is increasing.

On the basis of the foregoing factors and considerations, it was concluded that, overall, the educational needs of the deaf and blind can best be served in a day program. It was stressed, however, that educational placement of the handicapped should be based on individual assessment and that there would always be a segment of the deaf and blind population that could not benefit from a day program. For the latter reason it was concluded that the residential schools should be retained. But, it was also concluded that it was highly undesirable for deaf or blind children to be enrolled in OSD or OSSB primarily on the basis that there was no local program for them to attend. It was found that an average of 60 percent of the student body at the residential schools (during the past school year) had been placed in these schools for the latter reason.

An examination of the day program revealed that with relatively few exceptions serious shortcomings exist, and that in many instances the criticisms leveled at the day program are justified. The weakness of the day program frequently centers about the lack of well-graded classes, and relatedly, the shortage of specialized teaching staff and equipment. Thus, it was concluded that in order for the day program to become a viable alternative to the residential schools, significant improvements must be made.

Two possible alternatives to placement in the residential schools are for consideration. Briefly these are the State-supported, regional special-education center and the special-education district. In essence, the former involves the establishment, by the State, of centers in carefully selected geographical locations – primarily in suburban and rural areas that do not have well-graded classes. The center would be either attached to or on the same campus with an existing public school facility. Such a center might be administered through the larger Regional Education Service Centers proposed by Drozda, Byers, and Virgin (1969). The special-education-district plan entails the voluntary banding together of school districts for purposes of forming a cluster of well-graded classes. These classes would be attached to a regular public school, staffed with specialized personnel, and provided with the needed special equipment. All member school districts would be contractually bound to send their hearing and visually handicapped children to the designated district together with necessary financial support for the child's education.*

In both plans, children who lived within a practical and acceptable travel distance would be expected to go home nightly. Those living at distances too great for daily travel to and from the center would be boarded in homes with carefully selected families. While it is recognized that boarding homes may not be easy to find, provision for realistically attractive level of compensation could increase prospects for finding satisfactory boarding home situations. Boarded children would be expected to return to their own families two-to-three nights per week (i.e., Friday, Saturday, and Sunday).

On the basis of an assessment and integration of the information obtained, the major conclusions are summarized below:

- There is a need for both residential and day programs in Ohio
- In general, both the residential and the day programs have significant weaknesses, and neither meet all of the major needs of the deaf or the blind; however, the day program has the potential for greater success.
- On an overall basis, the day program appears to be as good as, and in some respects better than, the residential programs in terms of the student end product.
- Even if no relevant differences were found between students of day and residential programs, certain negative factors operate at the two residential schools, e.g., separation of the student from his family, isolation of the student from the "real world", and the inadequacy of cottage parents.

*It is understood that a joint school district approach is being utilized in northeast Ohio.

- The national trend in the education of the deaf and the blind is increasingly moving in the direction of the day program.

- There is a need for a comprehensive and coordinated State plan for educating the hearing handicapped and the visually handicapped.

The research efforts and the conclusions cited led to the following major recommendations:

- The two State residential schools should be retained to serve the needs of such students as, (1) those who are unable to benefit from a day program, (2) those who have multiple handicaps – including the slow learner, and (3) those who have unsuitable home environments.

- Over the 1970-1980 time period, efforts should be directed toward the elimination of placement in the residential schools based principally on the lack of a local program. Alternatives such as the State-supported, regional special-education centers or the special-education districts should be considered to implement this recommendation.

- Study and planning efforts should be initiated to improve the quality of day programs to meet the needs of the deaf and blind students who can benefit therefrom.

- Provision of evaluation and placement services of the type provided by the staff clinic team should be made available to all hearing and visually handicapped children.

- All public education of the deaf and blind – i.e., both the residential and day programs should be administered under a single organizational unit. (The logical organization would appear to be the Division of Special Education.)

- A State plan should be developed to serve as a guide for implementing an effective educational system for Ohio's hearing handicapped and visually handicapped. The plan should, in part, be directed toward implementing the recommendations cited above over the 1970-80 time frame.

In addition to the major recommendations cited above, a number of improvements and changes were suggested for consideration in both the residential and day programs. These suggestions are briefly summarized below.

Residential Schools

- Development of an improved program for selection, training, and up-grading of cottage parents

- Increased reinforcement (at OSD) of the oral-communication program outside of the classroom situation

- Provision of regularly scheduled, part-time campus jobs for enrolled students, as a practical mechanism for teaching responsibility

- Detailed reassessment of the vocational/prevocational program to determine the areas that should be taught

- Rotation of day students through specialized programs at the residental schools, e.g., for vocational/prevocational training, manual communication (for the deaf); orientation and travel training (for the blind)

- Development of a research center (on the grounds of the two schools) for the conduct of fundamental and applied research concerned with the education of the hearing and visually handicapped.

Day Program

- Assignment of day students to special courses at the residential schools, e.g., for one or two semesters, or during the summer

- Provision of staffed preschool facilities for children and their parents within a reasonable traveling distance of the child's home

- Development of an orientation course for "regular" teachers with deaf or blind children integrated in their classes

- Provision of better student counseling in the areas of vocational education and social skills by specialized guidance personnel.

The suggestions for improvement and change cited above should be subjected to further study prior to any application.

VII. AREAS FOR SUGGESTED RESEARCH

One of the major findings from the present research effort was that although there was much controversial opinion and considerable anecdotal literature relating to the education of the deaf and the blind, there was little empirically based information available on the subject. A survey of the more important research needs pinpointed by study resulted in the following list of topics that pertain directly or indirectly to the effectiveness of Ohio's system for educating the deaf and the blind. The research needs are listed in order of judged priority and practical importance. A brief discussion of the research rationale and in some cases a possible method of attack is contained in subsequent paragraphs.

- The development of an effective cottage-parent program in the residential schools
- A systematic procedure to obtain follow-up statistics on deaf and blind high school graduates
- A comparison of the relative effectiveness of oralism and the combined methods of communication
- A study to assess current vocational training programs for the blind and deaf in Ohio with recommendations for new areas of training
- Expansion of the preschool program at the Ohio School for the Deaf
- A determination of the achievement level of deaf and blind students in Ohio's special-education programs
- An evaluation of Ohio's special education programs for the deaf and blind by alumni of these programs
- Development of a comprehensive statistical system for describing the deaf and blind populations in Ohio
- The development of an instructional program for adult education of the deaf and blind.

The Development of an Effective Cottage-Parent Program

Residential-school children are generally separated from their families during much of the school year. While at school, students spend a substantial amount of nonclass time in their cottage areas, under the supervision of cottage parents. However, in general, cottage parents are neither adequately selected nor trained for their role as substitute parents. As indicated earlier in this report the cottage parent situation has been described as one of the weakest aspects of the residential-school program. Therefore, it is suggested that the entire program of cottage-parent employment be studied and evaluated in the following areas:

- Establishing selection criteria
- Developing a salary structure that would attract individuals with desirable qualities
- Developing a training program for all cottage personnel
- Developing alternative approaches to the "living-in" arrangement presently being used by cottage parents at the two residential schools.

With regard to the latter item, employment of cottage parents for a single 8-hour shift would probably enhance prospects for attracting younger and more suitable personnel. Employment on this basis is being used with apparent success in Illinois and California residential schools.

Obtaining Follow-Up Statistics on Blind and Deaf High School Graduates

In the present study, it was considered important to obtain follow-up statistics on deaf and blind graduates in order to determine what influence a particular school setting might have had on the type of employment or advanced education a graduate pursued after leaving school. Such information could have obvious implications for school programs. However, apart from anecdotal information, follow-up data on Ohio's students was unobtainable. It is suggested, therefore, that a systematic and practical procedure be developed to obtain this information on a continuing basis for Ohio's special-education students. The California School for the Deaf (Riverside) has developed a system for obtaining follow-up statistics by means of a short questionnaire mailed annually to its graduates of the past 5 years. It is suggested that Ohio consider this system as one possible approach to obtaining follow-up data. It is further suggested that such agencies as the National Association for the Deaf and the American Foundation for the Blind and their Ohio counterparts be contacted for their cooperation in obtaining follow-up information.

Comparison of the Relative Effectiveness of Communication Methods

Much of the literature reviewed for the present study contained some mention of the merits or faults of a particular method of teaching communication to the deaf. Despite some comparative research, the long-continued methods controversy has not yet been resolved, and has in fact been made more complex by the introduction of various new techniques (e.g., the Guberina method) which are also purported by their adherents to be "the most effective methods". It is recommended, therefore, that comparative empirical studies of both the recently developed and the older methods of teaching communication be carried out.

As the effectiveness of a method may be a function of the child's age, this variable should be considered carefully. Other variables that may be equally important include (1) the severity of the hearing handicap, (2) prelingual-versus-postlingual deafness, (3) the presence of handicaps other than deafness, (4) emotional maturity and stability, and (5) I.Q.

An Assessment of Vocational Training Programs for the Blind and Deaf

Some information obtained during the course of the present study indicated that many deaf and blind enter occupations unrelated to those in which they received vocational or prevocational training and that others take menial jobs demanding little application of their capabilities and interests. It is realized that this situation, in part, is the result of a disinclination on the part of employers to accept a qualified blind or deaf applicant as a skilled and productive worker. However, other contributing factors stem from vocational programs which appear to be out of focus with current labor demands and changing technology.

The extent to which vocational training in Ohio's schools for the deaf and blind handicapped can be updated, and its scope broadened, requires a research program including such efforts as:

- An evaluation of the present vocational-training programs to identify strengths and weaknesses
- Study of the present and future job market to determine what vocational or prevocational curriculum should be offered
- Identification and selection of new vocational areas with performance requirements that are not in conflict with the limitations of blindness and deafness
- Evaluation of the feasibility of a summer program for vocational training of day-school students at Ohio's residential schools.

Expansion of the Preschool Program at the Ohio School for the Deaf

Interviews with experts on the education of the deaf and the blind across the United States revealed generally unanimous agreement that early diagnosis of deafness and blindness, followed by a preschool program to stimulate sensory awareness, perceptual motor coordination, and participation in family activities provides excellent preparation for entry into a regular educational environment.* Such a program should be designed also to provide parents with guidance on the needs of their handicapped preschoolers and how they should be raised. The program being developed at OSD provides this type of preschool program for those parents who are able and willing to travel to the school with their handicapped children. It is suggested that this program be systematically expanded through the use of trained field workers, possibly in combination with a correspondence course, for those families who, because they reside at prohibitive distances from the Columbus area, are unable to bring their blind and deaf preschoolers to the Columbus program.

Prior to expansion of the program factors such as the following should be determined:

- The feasibility of field worker approach as well as the number and frequency of contacts required for effectiveness
- The effectiveness of correspondence materials (The materials prepared by the John Tracy Clinic in California should be considered in this regard.)
- The need for a field worker training program
- The location of field-worker offices for providing services to the greatest number of handicapped.

Achievement Level of Blind Students and Deaf Students in Ohio's Special-Education Programs

It was intended in the present study to include an evaluation of the achievement levels of blind students and deaf students in Ohio as one measure of the comparative effectiveness of the educational setting in which they were enrolled. Inasmuch as only limited data could be obtained, it is recommended that a research effort of this type be carried out to include OSSB, OSD, the two A. G. Bell Schools, and

*McFadden (1969) presents information on preschool education in one report of a series, "Planning to Meet Educational Needs in Ohio Schools", which was prepared by Battelle Memorial Institute for the Ohio Department of Education.

the special classes for deaf students and blind students in Ohio's public schools. Prior to the conduct of such a study consideration should be given to such factors as:

- A determination of the most appropriate tests for collecting the desired information
- The development of an experimental design and sampling plan for achievement-test administration
- The preparation of uniform test-administration and -scoring procedures to permit subsequent comparative data analysis
- The selection of appropriate statistical methods for analysis of the data and for establishment of valid relationships.

An Evaluation of Ohio's Educational Programs for the Deaf and Blind by Alumni

One measure of the success or failure of an educational setting is the impression held by its alumni regarding the strengths and weakness of the program. The reaction of alumni concerning the adequacy of their preparation in terms of the academic and vocational program, the availability of special services and equipment, and the quality of the instructional staff would be systematically obtained. The present study indicated that alumni are sensitive to the role played by their school in assisting them to obtain employment, the influence of their school environment on social maturity, and the extent to which such environments promoted a desire to compete and intermingle with the hearing or seeing community. It is therefore suggested that research be conducted to develop a research plan and survey instrument to obtain systematically such information from alumni on a continuing basis.

Improving the Statistical System Describing Special Education of the Deaf and the Blind

One of the problems experienced in carrying out the present study was that of obtaining accurate and consistent statistical data. While Ohio presently has a central file for information on hearing-handicapped and visual-handicapped children, its usefulness in the present study was somewhat limited. Further, statistical information having implications for the education of the deaf and the blind was spread out over a number of state and private organizations. However, the major problem was that of obtaining data on cost per pupil in the day-class program. In addition to the fact that the information could not be obtained centrally, the limited cost data obtained was for different fiscal years, did not include all of the same items, and the expenditures listed were apparently not always treated in the same manner. It is suggested, therefore, that a thorough evaluation be made of the statistical data-base related to the education of the deaf and the blind. The evaluation should consider such questions as the following:

- What is the feasibility and value of establishing a central source of comprehensive statistical information?*
- Are there additional items of information that need to be obtained for the evaluation of the present educational program and the planning of future programs?
- How can the information best be organized, categorized, and statistically described?
- How can the information best be made available to interested educators and administrators of educational programs in Ohio?

Development of Instructional Programs for Adult Education of Deaf and Blind

The availability of adult education for the nonhandicapped population has allowed many mature individuals to complete a high school education, develop vocational skills, and enrich their lives through the diversion of arts and crafts activities or through some area of academic interest. It appears that the residential schools would be ideally suited for the development of a pilot program whereby opportunities for self-improvement in academic, vocational, and avocational areas would be made available on an evening basis to the adult deaf and blind. As a result of this effort, if successful, similar programs could be established in areas selected to serve the largest number of adult deaf and blind throughout the State.

The development of an adult program would require investigation of such questions as:

- What is the interest level of the adult deaf and blind in such a program?
- What academic and vocational areas are of most interest?
- What steps must be taken to develop courses geared to the interest and capability levels of the adult deaf and blind?
- What are the necessary resources (e.g., facilities, equipment, and staff) required to establish a program?
- Where are the greatest concentrations of adult deaf and blind located in Ohio?

*A program to collect statistical information is included in the Regional Education Service Center approach proposed by Drozda, Byers, and Virgin (1969) in a report prepared by Battelle Memorial Institute for the Ohio Department of Education.

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APPENDIX

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PHASE I
AUXILIARY PERSONNEL
DATA PROCESSING
EDUCATIONAL TECHNOLOGY
SCHOOL FACILITIES
LIBRARY MANPOWER
PUPIL TRANSPORTATION
VOCATIONAL AND TECHNICAL EDUCATION
SUMMARY REPORT

PHASE II
LIBRARY SERVICES
REGIONAL SERVICE CENTERS
PRESCHOOL EDUCATION
VOCATIONAL EDUCATION
• EDUCATION FOR THE BLIND AND DEAF
SUMMARY REPORT

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